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RECORDS OF THE INTERNAL TEMPERATURES OF HEALTHY CATTLE UNDER DIFFERENT CONDITIONS.

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WITHOUT entering into the question of either the value of a judicious employment of the thermometer as a means of determining the intensity of animal heat, or of the certainty or character of the influence, both in health and disease, which external conditions exercise over this state, I have thought it may be of advantage to place before others who may not possess the same opportunities, the results of extended observations on our larger ruminants, carried out with the view of determining the range of normal temperature under certain conditions. This I have been the more ready to do from seeing that, notwithstanding the numerous observations which have already been made, some, at least, of our professional brethren are yet rather undecided in their opinion as to the question of the internal normal temperature of these animals. The greater number of the observations tabulated here were made on two different occasions, at the Smithfield Club Show, held in the Agricultural Hall, Islington. The animals were all believed to be in the full enjoyment of health—certainly they were in full condition. Those made by Mr. Singleton were on ordinary dairy cows, part calved, and part in calf.

TABLE I.

Internal temperature of forty-three animals not over two years old.

a.m.	p.m.	Resp.	a.m.	p.m.	Resp.	a.m.	p.m.	Resp.
101·6	103·2	28	101 8	102·	16	102·5	103·0	24
101·6	102·8	32	102·2	103·	40	102·4	101 6	28
102·	102·8	26	102·	102.8	16	102·3	103·	28
103·	102·6	32	102·	102·6	42	103·4	103·2	27
102·	102·4	50	102·9	102·8	20	101·6	101·8	36
102·4	103·	32	102·4	102·4	55	102·	102·2	29
102·2	102·4	45	102·2	102·6	29	102·2	102·	53
102·	102·2	21	101·8	101·8	50	102·	102·	20
101·2	102·6	23	101·6	101·8	35	102·2	102·2	28
101·	102·	18	102·	102·4	27	101·4	101·6	18
101·6	102·6	36	103·	101·	14	102·	102·	23
101·2	101·8	28	101·4	102·2	28	101·8	...	44
101·	102·4	25	103·3	...	32	102·3	...	36
102·5	...	32	101·8	...	40			
102·1	...	48	101·4	102·8	60			

The highest reading in those forty-three animals is 103·9, the lowest, 101. The average of the forty-three taken in the morning is 102·05; of the thirty-seven evening temperatures, 102 39.

The number of respirations per minute varies from 18 to 60; the average of the forty-three animals being 31·98 per minute.

TABLE II.

Internal temperature of fifty-nine animals between two and three years of age.

a.m.	p.m	Resp.	a.m.	p m.	Resp	a.m.	p.m.	Resp.
102·2	102·4	42	102·2	...	36	101·8	102 6	37
101·8	102·6	30	101·2	...	40	101·2	102·	33
102·2	102·4	20	103·	...	52	102·	103·	26
102·	102·6	24	102 6	...	32	101·6	102·2	17
102·2	102·6	28	103·	...	20	100·	...	40
102·2	103·	30	102·6	103·	22	101·6	...	46
102·	102·5	30	101·4	102·7	16	102·1	...	50
101·6	101·	18	101·8	102·6	30	102 5	...	40
101·6	102·4	23	102·2	101·8	24	101·5	...	18
101·4	101·8	19	102·4	103·6	18	102·4	...	36
101·4	102·8	16	102·	102 4	18	102·6	102·6	20
102·	102·6	17	102·	103·2	20	101·8	102 2	18
102·4	102·2	11	101·8	101·	20	102·2	103·8	56
101·4	104·2	36	101·2	102·	40	101·6	102·3	42
101·6	...	37	101·6	103·	46	102·	102 4	28

a.m.	p.m.	Resp.	a.m.	p.m.	Resp.	a.m.	p.m.	Resp.
101·8	102·	32	101·2	102·8	25	102·6	...	34
102·	102·	24	102·2	101·	20	102·4	...	26
101·	102·2	21	102·2	102·8	18	102·	...	20
101·8	102·4	17	101·4	...	15	102·	...	24
101·8	103·	49	101·4	...	30			

Amongst the above fifty-nine animals, the highest thermometric reading is 103·8; the lowest being 100. The average of the morning temperatures of the whole fifty-nine is 101·87; that of the evening temperatures of forty-one, 102·3.

The number of respirations per minute varies from 11 to 56; the average of the fifty-nine animals being 28·42 per minute.

TABLE III.

Internal temperature of fifty-seven animals between three and four years of age.

a.m.	p.m.	Resp.	a.m.	p.m.	Resp.	a.m.	p.m.	Resp.
102·1	102 6	24	101·6	102·	20	102·	102·6	42
102·6	103·2	15	101·7	102·	28	102·	102·4	42
102·3	102·3	28	102·	102·	32	102·8	102·4	36
101·6	102·	34	103·2	104·2	23	101·8	102·	66
102·4	102·6	32	102·	102·	23	102·	102·6	41
102·2	102·6	34	102·4	102·8	49	100·8	101·8	14
101·6	102·4	20	101·6	102·	56	101·8	101·8	21
101·8	101·4	29	100·6	102 2	35	101·4	102·	28
101·8	102·	31	101·8	102·	44	101·6	101·8	22
102·	102·2	25	103·	104·2	13	103·	104·2	12
101·4	102·	18	101 8	102·	23	101·	102·2	46
101·4	101·6	27	102·	101·6	22	102·4	101·8	17
102·	102·	22	101·6	103 2	27	101·4	101·8	18
101·4	102·	30	101·2	102·	21	102·	101·6	23
102·	101·4	26	101·6	102·	22	101·6	100·	28
101·	100·	34	101·4	100·	29	108·2	...	28
101·5	...	16	101·3	...	40	102·	...	44
101·8	...	40	102·5	...	48	109·6	...	36
102·	...	40	101·6	...	28	102·6	...	50

Amongst the above fifty-seven animals the highest recorded temperature is 104·2; the lowest, 100. The average of the morning temperatures of the fifty-seven is 101·83, that of the evening of forty-seven, 102·11.

The number of respirations per minute varies from 12 to 56; the average of the fifty-seven being 30·2.

TABLE IV.

Internal temperature of fifty-two animals of various ages, chiefly over three years.

a.m.	p.m.	Resp.	a.m.	p.m.	Resp.	a.m.	p.m.	Resp.
102·2	103·	49	102·3	103·	28	102·3	102·	36
101·6	101·6	16	102·	102·6	18	101·8	102·	31
101·6	102·6	36	102·4	102·8	36	101·	102·2	20
100·2	101·8	36	101·4	103·4	45	102·2	103·4	14
101·4	101·	38	102·4	102·2	29	103·2	...	34
101·	101·6	27	102·	...	40	101·	...	28
102·	...	24	101·	...	25	102·	...	31
101·2	...	20	100·	...	40	102·	...	47
100·	...	40	101·	...	48	102·	...	42
102·	...	50	102·2	...	51	101·6	...	36
101·4	...	42	102·	...	40	104·6	...	40
102·6	...	44	103·	...	32	102·	...	24
102·5	...	32	102·6	...	36	102·4	...	48
100·	...	32	102·2	...	44	102·4	...	40
102·4	...	24	102·2	...	20	102·	...	28
102·6	...	44	100·	...	44	103·2	...	36
102·	...	36	103·	...	41			
102·6	...	30	102·	103·	20			

Of the fifty-two animals in the above table upon which observations were carried out, the highest recorded temperature is 104·6; the lowest, 100. The average of the morning temperatures of the fifty-two is 101·9; that of the evening record of sixteen, 102·2.

The number of the respirations per minute varies from 16 to 49; the average of the fifty-two being 34.

TABLE V.

Internal temperatures, etc., of forty-one animals of various ages, taken at the Smithfield Show, 1884.

Morning Record.		Evening Record.		Morning Record.		Evening Record.	
Temp.	Resp.	Temp.	Resp.	Temp.	Resp.	Temp.	Resp.
101·8	52	101·2	48	101·8	28	101·4	38
103·	16	101·2	40	102.2	48	101·6	50
101·6	26	101·8	46	101.6	94	101·4	66
101·6	42	101·4	92	101·4	30	102·8	88
101·2	32	101·4	38	101·2	50	101·4	92
101·8	48	101·4	40	101·	38	101·8	60
101·2	31	102·	22	101·	38	100·2	46

Morning Record.		Evening Record.		Morning Record.		Evening Record.	
Temp.	Resp.	Temp.	Resp.	Temp.	Resp.	Temp.	Resp.
101·6	88	101·6	64	101·8	58	101·8	48
102·	62	101·6	82	101·6	48	101·8	78
102·	54	100·8	52	101·6	32	101·8	52
101·6	52	101·6	68	102·2	20	102·6	92
101·4	44	101·4	44	101·6	106	101·8	50
101·4	46	101·	82	101·8	44	101·4	61
101·6	60	101·	58	101·2	44	102·2	66
102·	22	102·4	32	101·4	84	101·2	36
101·6	42	101·8	14	102·2	80	101·4	94
100 8	20	101·4	30	101·6	66	100·	72
101·2	46	101·4	26	101·8	56	101·6	86
102·2	50	102·2	84	101·4	54	101·4	64
101 2	38	101·4	66	102·2	64	101·4	68
101·4	42	102·2	46				

Of the forty-one animals in this table, the highest noted temperature during the morning observations is 104·4; the lowest, 101; the average being 101·4.

The number of respirations per minute at the same period varies from 16 to 106, the average being 24·33. During the evening observations, the highest reading is 102·8; the lowest, 100; and the average, 101·04. The number of respirations per minute at the latter period varied from 14 to 94; the average being 29·03.

TABLE VI.

Internal temperature of 100 *dairy cows, taken by Mr. Singleton, Ealing, in March,* 1885.

101·1	101·3	101·	102·3	101·8	101·8	101·8	102·3
101·3	101·3	102·1	102·1	101·8	101·8	101·3	102·1
101·8	101·1	100·8	101·8	101·1	101·8	101·3	102·
101·	101·	102·	101·3	101·5	102·	101·5	102·8
101·5	99·8	101·8	101·8	101·8	101·1	100·5	102·3
101·3	101·	101·1	99·8	101·	101·	101·	101·3
100·8	101·5	101 5	101·1	102·8	101·1	101·	101·8
101·8	101·1	101·	102·	101·	100·5	102·3	101·5
102·1	101·	101·3	102·	102·	101·3	102·3	102·3
101·3	101·1	101·1	101·1	101·3	101·5	101·5	
103·3	101·1	102·1	101·8	101·8	101·3	101·	
101·8	100·8	102·2	101·3	101·8	101·3	101·8	
101·8	101·1	102·	101·1	102 1	101·8	101·8	

In this table the highest noticed temperature is 103·3, and the lowest 99·8. The average of the 100 cows is 101·5.

The above observations were taken on February 17th, 18th, 19th, and 20th, 1885. Before commencing, the thermometer was examined by Negretti and Zambra. The temperature was taken at the rectum, where the instrument was allowed to remain three minutes in each. Of these 100 cows, twenty-five were in calf; the others had calved at periods varying from two to eight months, and were in full milk.

Of the aggregate number of animals, cows and oxen, 352, upon which these observations were carried out, the highest thermometric reading recorded is 104·6°F., the lowest, 99·8; the average morning temperature over the whole being 101·65; while the average evening temperature, taken from over 200 animals, is 102.

The number of respirations per minute, recorded at the same time in 250 animals, varied from 11 to 106: the average being 30·25.

RHEUMATIC ARTHRITIS.*

BY T. CAMPBELL, M.R.C.V.S., KIRKCUDBRIGHT.

THE subject I have chosen for your consideration and discussion is Rheumatism. It is not my intention to enter into details, or to describe the different phases of Rheumatism; so I will confine my remarks to that form of this disease which affects joints, viz.:—

RHEUMATIC ARTHRITIS.

Acute Rheumatic Arthritis may be defined to be a constitutional, specific, inflammatory affection of the structures in and around the joints, and attended with considerable febrile disturbance; and never in the horse (that I am aware of) does it lead to suppuration.

We have a sub-acute form, which is manifested in a much less degree of intensity, and which generally follows upon the acute form.

To illustrate my subject, I will give you a sketch of a case

* A Paper read before the West of Scotland Veterinary Medical Society.

that occurred in my practice about twelve months ago. I may tell you I have had several cases both before and after this one, but not so acute.

The subject of this case was a valuable Clydesdale foal. My assistant visited the case first; and, considering it rather a serious one, he advised my attendance at once. I found the foal carrying the near hind-leg, the hock of which was considerably swollen and tender, the little patient evidently suffering great pain. Pulse increased, and of a hard, full tone; temperature, 103·5; respirations rapid; bowels inclining to be slightly constipated; the heart's action regular; and I failed to detect any abnormal sound.

On inquiring into the history of the case, I found the foal had been seen the night before, when it appeared in perfect health, but in the morning it was seen going lame on the near hind-leg, and it refused to drink. Having agreed to the mode of treatment to be pursued internally and locally, I requested my assistant to visit the case morning and evening, and report progress.

On the following day he reported to me that the case was progressing favourably, all the acute symptoms having disappeared, the patient walking pretty well, although the hock remained a little swollen. But the following evening I again saw the case, and to my annoyance found the off-hock similarly attacked as the near one. We pursued the same treatment, when the acute symptoms disappeared from this hock also; but on the following afternoon the foal was noticed to hang its head, and appear stupid and very dull. It gradually became worse; and when we visited it in the evening, we found it lying perfectly comatose, and in a short time it died without a struggle, the ultimate cause of death being Rheumatic Meningitis.

That Rheumatic Inflammation has a decidedly erratic disposition, must be admitted by all who have had a case under their treatment. It flies from joint to joint, or at last one articulation suddenly ceases to exhibit inflammatory symptoms, and another (probably the corresponding articulation) becomes as suddenly implicated, and this alternation may occur many

times during a single attack. A symmetry is often shown in the order of attack—the right hock, then the left; the right shoulder, then the left; and so on. It is a matter of astonishment to observe how quickly and completely the inflammation will subside in one joint before another may become affected. The hock, for example, in the case I have submitted to you, was one day found to be intensely hot and swollen, and so tender that the slightest pressure produced great pain; but, on the following day, scarcely any evidence remained of the animal's previous suffering.

As in some other diseases due to an altered condition of the blood, we also observe in Rheumatism a certain amount of symmetrical action. On reflection, it will be found that our surprise should rather be excited by a want of symmetry than by its occurrence; for, supposing that any morbid element has a peculiar attraction to any one joint (a hock for example), it is necessarily drawn to the second hock more powerfully than any other joint; or, supposing again that the circumstances in one particular joint more especially favour the development of any specific form of inflammation in it, the conditions of the corresponding joint on the other side of the body must do so likewise.

One of the most prominent constitutional symptoms in Rheumatic Arthritis is the temperature. Although the temperature in the case I have described to you never exceeded 104° F., still I have seen the temperature in other cases, with the acute symptoms less severe, reach 105° F. When I refer to Professor Williams's "Veterinary Medicine," I find he has known the temperature to rise to 109° F. in a cow with Rheumatism; also I see that Dr. Aitken, in his work on the "Science and Practice of Medicine," gives the temperature as high as 110° F. in cases complicated with severe Pericarditis.

Although in Rheumatism the temperature and febrile symptoms run very high, many of you, as well as myself, must have noticed that the frequency of the pulse is never greatly altered. Certainly the tone is always altered, being full and hard; but the frequency is never very much altered, unless we have serious pericardial complications.

Condition of the Blood in Rheumatic Arthritis.—Regarding this, I can say little, as I have not analysed or tested it in any way. So I can only repeat to you what I have been taught and what I have read. The majority of authorities on the subject agree that fibrine is increased in quantity, but somewhat altered in quality. Some believe in the presence of lactic acid; while others deny it.

The Urine.—I have frequently tested the urine, and have always found it neutral. It is generally high-coloured, and in the majority of cases scanty; and if so, we must necessarily have the proportion of solids increased, notably urea.

Morbid Anatomy.—The majority of cases recover, and I have had only once the opportunity of making a *post-mortem*. In this case, the hock was the seat of the inflammation. I found considerable effusion in the cellular tissue around the joint. The synovial membrane was much thickened, and quite red, accompanied with an augmentation and discoloration of the synovial fluid, and the articular cartilage had lost its normal shining appearance.

Pathology.—This subject I will not attempt to handle; but perhaps it will be advisable that I should quote to you some of the views held by high medical authorities.

One set of pathologists (amongst whom I may name Sir C. Scudamore and Cullen) look upon Rheumatism as simply an inflammation of fibrous and serous membranes, and make the following remarks:—"It may be stated that the predisposition to Rheumatism consists in a deficiency of healthy tone in textures connected with joints and muscles, and in nerves, so as to be affected in this peculiar manner by the influence of variable temperature. If we lose sight of the humoral term Rheumatism, we shall come to the simple fact that in a condition of susceptibility, cold or sudden reduction of temperature makes a particular impression on the vessels and nerves near the surface, and produces a painful affection of certain textures, which is attended with more or less inflammation, the phenomena of which are so far of a peculiar nature that we either consider the disease specific—inasmuch as the symptoms differ in their constituent character from those produced by other inflammations;

or we may view the effect in the light of common inflammation, modified, on the one hand, by the nature of the exciting cause — the external one, cold; and, on the other hand, by the particular species of textures which become affected."

A second set of pathologists consider the phenomena of Rheumatism as produced by the presence of some peculiar principle in the blood, either one altogether foreign to its healthy constitution, or an augmentation of some normal ingredient. Among these authorities, I see Professor Williams gives the names of Dr. Prout and Dr. B. W. Richardson, who hold that lactic acid is the principle in question: the latter authority having experimentally injected into the peritoneal cavity of dogs lactic acid, causing both Peri- and Endo-carditis. These experiments are certainly instructive; but some authorities of equal merit ask the question, "Might not the injection of acetic or formic acid produce the same result?"

On looking over my notes taken from lectures delivered by Professor McCall in 1863, I find he defines Rheumatism to be a constitutional, specific, irritative or inflammatory nervous affection, generally developing itself or attacking fibrous and serous membranes. Now this definition comprehends a great deal; and I cannot see that writers, even of the present day, have improved much on it.

Causes.—Pre-existing disease; hereditary predisposition; atmospheric influences; exposure to cold (especially after being heated); getting wet, and becoming chilled with a cold wind (thereby causing a sudden check to the functions of the skin).

Treatment: constitutionally.—In this disease, as in many others, too much attention cannot be paid to the general comfort of the animal. See that your patient is not only comfortably housed, but warmly clothed. Give a mild aperient, the strength of which must be regulated according to the condition of the bowels, the cathartic I prefer being aloes. If the fever is high, and the animal suffering acute pain from local lesions, inject subcutaneously Morph. hypoderm. three times daily. I may here mention that foals, like children, are readily affected

by the use of morphia; so considerable caution should be used in its administration. Give salicylate of soda in a little milk. And in foals, when you have a high temperature, I strongly recommend the use of sulphate of quinine. At the same time prescribe for the mother a liberal amount of nitrate of potash in her food.

If my patient is over two years old, I always administer calomel and opium in the early stage, followed up with salicylate of soda. Give to drink new milk and barley-water, sweetened with a little treacle, to which add nitrate, or bicarbonate, of potash.

When we take into consideration the over acid and fibrinous state of the blood, it is quite natural and right to suppose that we should at all times administer alkalies; and this line of treatment is not only recommended, but practised by the most eminent men in our profession.

Local Treatment.—In acute cases, where the inflamed parts are swollen and tender, I recommend continued fomentations, until the tenderness and pain are relieved; then apply, for one or two days, Lin. sap. cum opii. After using this liniment for a day, I generally add to it half a dram to the ounce of Tinct. aconite. If the swelling is not entirely removed with this application, and the tenderness and pain gone, I at once apply to the part daily Lin. camph. co., until it becomes very tender, after which I apply lard or vaseline.

In Sub-acute Cases, I administer, internally, iodide of potassium and salicylate of soda, and to the water given to drink add nitrate of potash; and, no matter what articulation is affected, I at once apply to it a mild *blister*.

Case No. 7.—From Notes.

Subject.—A valuable Clydesdale colt. Found to have become suddenly lame in the off hind-leg, and off his food. I was called in immediately the animal was observed not to be right. On examining the case, I at once came to the conclusion that the colt was attacked with Rheumatic Arthritis, accompanied with unusual high fever, indicative of pericardial complications.

COPY OF NOTES TAKEN FROM THIS CASE OF RHEUMATIC ARTHRITIS.

Date.	Temperature.	Pulse.	Remarks.
June 9.	104° F.	70	Respirations increased; mouth dry and hot; off hock slightly swollen and tender.
„ 10.	104°	68	Respirations not so rapid; hock painful and tense, due to augmentation of synovia.
„ 11.	103·8°	66	Respirations nearly normal; hock more swollen than yesterday—due to subcutaneous effusion; the animal is suffering less pain than on the 9th.
„ 12.	103°	60	Hock still swol'en; pits on pressure, and not painful to the touch.
„ 13.	103°	54	The patient is feeding better, the effusion over the hock is becoming absorbed; no lameness to-day.
„ 14.	103·5°	65	Considerable constitutional disturbance; the animal is lame on near leg; I cannot observe swelling in any of the joints.
„ 15.	103·5°	60	Without doubt the near hock is affected, and very painful on manipulation; synovial capsule slightly distended.
„ 16.	103·5°	56	Near hock is now in a similar condition to what off one was on the 11th.
„ 17.	103°	56	All symptoms same as yesterday; the joint, perhaps, is less painful.
„ 18.	102°	52	The hock is very much better to-day, pain gone, and swelling soft.
„ 20.	101·8°	52	The animal is walking very well, and the effusion is being rapidly absorbed.
„ 23.	normal.	50	I consider the patient convalescent.
„ 28.	103°	78	I have again been called in. Colt is shivering; I have difficulty in making up my mind what is wrong.
„ 29.	104·5°	65	The colt is lame in off hind leg; the synovial bursa of the patellar articulation is distended. It is evident I have a relapse.
„ 30.	104°	60	Stifle joint very much swollen and painful; the animal is not feeding, and restless.
July 1.	103·5°	63	The temperature is down a little, but generally there is no improvement.
„ 2.	102°	60	Marked improvement to-day; joint not so painful.
„ 3.	101°	56	The patient progressing favourably.
„ 5.	101°	54	Stifle joint still swollen; animal lame.
„ 8.	normal.	48	Same as last visit. This is one of the worst cases I have had. From the attack until complete recovery took place, the animal suffered for a period of two months. The colt was a valuable one, and I was ordered to spare no expense as to medicine and attendance.

OBSERVATIONS ON THE TREATMENT OF TETANUS IN HORSES.

BY J. BRODIE GRESSWELL, M.R.C.V.S., LOUTH, LINCOLNSHIRE, AND ALBERT GRESSWELL, B.A., CH. CH., OXON., M.R.C.S.

(*Continued from page* 163.)

HYDROCYANIC ACID.

Physiological Action.—Hydrocyanic, or prussic, acid is alike fatal to animal and vegetable life. In toxic doses it paralyses the cerebro-spinal axis, acting especially on the medulla oblongata and its respiratory centre. Death may be caused in two ways by this potent poison.

A large dose proves fatal in the course of a few seconds. The animal falls as if struck by lightning, and the pupils are widely dilated. The heart and the nerve centres seem to have their functions arrested simultaneously.

A smaller but fatal dose causes death by paralysis of respiration. The breathing becomes slow and gasping, the heart's action and pulse almost imperceptible, and consciousness is lost. In many cases death is preceded by suffocative convulsions. The dyspnœa is due to two causes, viz., to the paralysis of the respiratory centre in the medulla oblongata, and also to the fact that prussic acid combines with the hæmoglobin of the red corpuscles, thus, probably, interfering with the giving-up of oxygen to the tissues.

The toxic effects of prussic acid are observed in all animals, by whatever way the poison enters the system.

Value of Prussic Acid in Tetanus.—We believe that we are correct in stating that hydrocyanic acid has had a more extensive trial in the treatment of Tetanus than almost any other remedy; yet there is as much diversity of opinion as to its efficacy in this disease as there is about the precise mode of its physiological action.

Mr. D. Gresswell prescribed this acid in a large number of cases, and was of opinion that, although a useful remedy, it could not be relied upon in any doses in severe cases. Our own experience also, and that of Mr. Charles Gresswell, of Notting-

ham, does not lead us to regard it as of the same efficacy as aconite, tobacco, morphia, or chloral hydrate.

Finlay Dun, in his "Veterinary Medicines," says: "Mild cases of Tetanus, especially in young animals, are sometimes benefited; but it is of little use in aggravated cases or in aged animals."

Professor Williams, in his "Veterinary Surgery," says: "The prussic acid treatment, so highly recommended by Mr. Lawson, of Manchester, has with me proved to have no special superiority."

Viewing the question from an etiological and physiological point of view, one would not have great faith in the value of prussic acid in the treatment of this disease. At the same time, it is of undoubted power in reducing the severity of the spasms of Tetanus; but the administration must be repeated pretty frequently, as its soothing effects, though probably not nearly so transient as those of physostigmine, do not last very long. Of the value of the cyanides in Tetanus, we have no experience.

Opium and Hydrochlorate and Acetate of Morphia.

Physiological and Therapeutic Action.—We do not purpose to enter fully into the physiological and therapeutical properties of opium and the salts of morphia, as these are so well known to all; yet a few words may, perhaps, recall to the memory some of the more important facts of the actions of these much used and valuable remedies, bearing more especially on the disease in question. It will be best to treat of opium and its alkaloids together, as the latter have the same properties as opium in a concentrated form, being, however, less exciting and stimulating, and also less diaphoretic and constipating. Opium acts on the cerebro-spinal and on the sympathetic systems, and when given in full doses causes stimulation, followed by depression.

The following conclusions and experiments are derived from Dr. Harley's investigations. The soporific effects of opium result from the action on the cerebral hemispheres, and the excitant from excessive stimulation of the corpora striata and spinal cord. The acceleration of the heart is viewed as partly due to direct stimulation of the sympathetic nerves, and partly to an indirect

stimulation of the same centres, resulting from the excitement of the muscular movement.

Dr. Fothergill ascribes the soporific effects of opium as due to the anæmia of the brain and diminished activity of the cerebral cells, said to be caused by opium and its alkaloid, morphia.

Poisonous doses of opium cause death, by cessation of the respiratory movements. In a case where one ounce of powdered opium, dissolved in water, was given to a strong, healthy cart-horse, the pulse fell from forty-four to thirty-four beats per minute, the superficial muscles were relaxed, the nasal mucous membrane blanched, and the animal was dull and dejected.

After half an hour, four drachms, also dissolved in water, were given, and the dulness and the weakness of the pulse, which had now fallen to thirty-two, was increased.

Half an hour later, the animal, continuing in the same condition, was destroyed.

In animals poisoned by opium, the ventricles of the brain and the subarachnoid spaces contain more fluid serum than normal. There is general venous engorgement, and the right side of the heart is distended by soft coagula.

Value of Opium and of the Salts of Morphia in Tetanus.—As with so many of the remedies mentioned, there is great diversity of opinion regarding the beneficial action of opium and morphia in Tetanus. Finlay Dun writes: "Tetanus occurring in young animals from exposure to cold, is often treated successfully by opium, especially when conjoined with chloral hydrate or conium; whilst, in the more serious cases amongst adults, spasms and morbidly acute sensibility have been removed for several hours by the hypodermic injection of morphine deeply inserted into the tetanised muscles." Many practitioners, on the other hand, rarely or never prescribe opium, having but little faith in its value in this disease. Mr. D. Gresswell believed opium to be of great value; and we also are of opinion that the hydrochlorate of morphia, injected hypodermically, is one of the most powerful remedies we have in combating the severity and the length of duration of the paroxysmal seizures.

Mr. Charles Gresswell, of Nottingham, who has a large experience of the administration of morphia hypodermically in

Tetanus, believes that, with chloral hydrate and tobacco, this treatment is as efficacious as any combination of remedies with which he is acquainted.

We believe that the value of morphia in Tetanus is hardly sufficiently appreciated by some practitioners, and we are of opinion that it would, perhaps, be more extensively administered than it is, if its value in combating spasmodic seizures were more generally recognised. It has been pointed out, however, that horses, like men, show great differences in their degree of susceptibility to the action of opium, and this may, in some degree, account for the diversity of opinion as to its value.

Thoroughbred horses are more easily brought under its excitant action, whereas cart-horses more readily under the soporific effects.

When morphia does act beneficially in Tetanus, the duration of the effect is more lengthened than with several of the other remedies mentioned, and it does not, as physostigmine sometimes does, cause still more exaggerated seizures when the transient calm produced has passed over.

That horses will take very large quantities of opium, and still not succumb, is shown by the following case, which we quote from our "Manual of Equine Medicine" (page 365):—

"A few weeks ago, we were called in to see a black mare, aged eight years, to which the owner had administered one ounce and a half of Turkey opium. When seen on the day following the administration of the drug, the mare was found to be in a very dull, dejected condition; the pulse was very feeble and soft, and the artery very compressible. The number of beats was eighty-four per minute, and the temperature reached 102·5. The pupils were contracted, and there was total loss of appetite, the mare refusing all food and drink. The breathing was slow, but not stertorous, and the nasal mucous membrane was highly injected. The symptoms continued unabated for three days, during which time the animal moved round and round in the box. On the fourth day the pulse began to regain vigour, but recovery was not complete before the lapse of a week."

Caustic Potash, or Hydrate of Potash, and Bicarbonate of Potassium.

Physiological Action and Value in Tetanus.—Experimental research on animals has shown that the potash salts, when introduced immediately into the blood, are very poisonous, and this effect appears to be due to the base, and to be independent of the acid with which it is associated (always excepting such compounds as, *e.g.*, the cyanides, whose specific action is that of the combined acid). In cold-blooded animals the salts of potash, even in small doses, cause gradual but complete paralysis of the voluntary muscles, and finally of the heart, which ceases to beat in diastole, and no longer responds to irritation. In warm-blooded animals, the arrest of the heart is preceded by dyspnœa and convulsions. It is not certain whether the paralysis is due to some action of the salt on the nervous system, or on the idio-muscular contractility. Small doses raise the blood pressure in the systemic arteries, and slow the heart; poisonous doses cause immediate paralysis of the heart, and a sudden fall of blood pressure.

A very simple experiment, which we had the opportunity of witnessing in Leipsig some time ago, will serve to illustrate the poisonous character of the salts of potash as compared with that of sodium. Professor Ludwig, having secured a good-sized frog, washed out the blood, and injected into the veins of the animal a weak solution of chloride of potassium. Death very soon followed; but when chloride of sodium was substituted for chloride of potassium, the animal continued alive for some length of time after the performance of the experiment.

But, in addition to their sedative powers, the hydrate and the bicarbonate of potash have, in common with the sodium analogues, distinct antacid powers; and it is on account of these antacid properties that they have been so largely employed in rheumatic affections. The amount of alkali contained in solution of caustic potash, in medicinal doses, is small, and therefore its antacid powers are not very great. After absorption into the blood, free potash is said to increase the change of tissues in the body; and hence it is an alterative. It renders the blood more alkaline,

and is said to make the fibrine less plastic. Carbonate and bicarbonate of potash, similarly, are direct antacids; but they have not the sedative action on the mucous membrane of the stomach which the hydrate has. They are readily absorbed, and may be given in large doses.

According to Dr. Guttmann, poisonous doses of potassium salts paralyse the spinal cord and heart, depress or destroy the functions of afferent nerves, lower blood pressure and temperature, and cause muscular weakness, affecting first the hind extremities. They do not appear to act upon the muscles or peripheries of nerves.

We believe the hydrate or the bicarbonate of potash to be of great value as an adjunct to other remedies in the early stages of Tetanus, and we were first led to employ these remedies as adjuncts, from the impression that the acid products of muscular contraction, accumulating in the system, would tend to become neutralised in some degree by their injection. But we have never employed more than the ordinary doses, and have generally used the hydrate, given in the gruel, though we believe the bicarbonate to be perhaps as likely to do good. We do not, however, believe that the beneficial action of the potash salts depends altogether upon their antacid properties, but also upon their sedative properties, regarding which the above is a short abstract.

We do not believe the potash salts (except the bromide) have been much used in the treatment of Tetanus, but we think, from experience in several cases, that they are worthy of still further trial as valuable adjuncts, more especially in the early stages.

We may conclude our observations on the potash salts, by quoting a passage from our "Equine Medicine" regarding some physiological points of importance in the study of the phenomena of muscular contractions:—

"If a nerve-muscle preparation be carefully made and preserved, and the nerve be irritated in any way whatever, the muscle will respond to the application of this new incident force by an aggregate of changes which are collectively spoken of as a contraction.

"Further, if during the period of the maximum intensity of the contraction another equal stimulus be applied, the additional response will be nearly equal to the first.

"A lever suitably attached to the muscle will be raised very nearly as much again, and the amount of the two contractions will be nearly twice that of the first alone. If more stimuli of equal intensity be successively applied with each subsequent irritation, the amount of the consequent contraction becomes gradually less, until at length, when the stimuli reach a certain number in a given time, the lever is not raised higher, but the component contractions are apparently united, fused, as it were, to form a single continuous uniform contraction, and though really still existing, are not to be indicated by ordinary instruments.

"This condition of a muscle, which is called Tetanus, may be produced by the interrupted current, or by any rapidly repeated shocks. The frequency of the stimuli needed to produce Tetanus varies in different cases.

"'Kronecker and Stirling find that ten stimuli per second will cause complete Tetanus in the red muscles of the rabbit, whereas the pale muscles require at least double that number.

"'When the stimuli are repeated more frequently than is required to bring about a complete Tetanus, the constituent contractions are still proportionately increased in frequency. This is shown by the increased pitch of the muscular sound.

"'Kronecker and Stirling, by using a special instrument for rapid interruption, the so-called tone inductorium, have been able to obtain in all cases a complete Tetanus with alternating induction shocks, even when repeated, they believe, as frequently as 22,000 times a second' (Foster).

"Thus it appears that the number of constituent contractions which may coalesce to form a Tetanus is very great indeed, and we can only conclude from this that in the disease where so many muscles are involved, the expenditure of force entailed is enormous, even if we suppose that the spasms are not of a very complex character—that is, are not constituted by a large number of component contractions.

"Every time a muscle contracts there is an expenditure of

energy. Work is done ; force is supplied, directly or indirectly, by the dissociation of highly complex organic compounds, of whose nature little is known, and thus waste products are produced."

Quinine, Salicine and Salicylate of Sodium, and Salicylic Acid.

Physiological Action and Value in Tetanus.—Quinine has a powerful sedative influence upon the spinal cord and brain, diminishing, and finally abolishing, reflex movements. It lowers the heat of the body in healthy animals, but this action is most manifest in the pyrexia artificially induced by the injection of putrilage into the circulation. It is probable that this effect is due to the *checking of oxidation within the organism.*

We have administered quinine, with salicine, in some cases of Tetanus, and believe it to have a beneficial action in this disease. Mr. D. Gresswell also administered quinine sulphate in several cases of this affection, and never observed any ill effects attending its administration. He, too, administered the quinine along with salicine. The effects of salicylic acid closely resemble those of quinine, but it is more depressing in its action than salicine, and is less rapidly absorbed than the salicylate of sodium.

Tobacco and Nicotine.

Physiological Action.—Nicotine causes in frogs Tetanus and general paralysis. In warm-blooded animals there occur twitchings and tetanoid convulsions, excited by the slightest stimulus.

It tetanises by its action on the cord. It paralyses the cord and motor nerves (Vulpian, Rosenthal, Krocker), the peripheral nerve-endings being first affected ; it also paralyses the muscles (Rene). The brain is unaffected (Ringer's "Therapeutics"). It also appears to tetanise the heart, and kills by arrest of respiration.

In medicinal doses, tobacco causes motor-depression and muscular relaxation. As a motor depressant, it is said to be allied to pituri, to hemlock, and to lobelia inflata, or Indian tobacco. Calabar bean and prussic acid are more immediate and direct depressors of the cord.

Value of Tobacco and Nicotine in Tetanus.—Both tobacco and nicotine $C_{10}H_{14}N_2$ have been extensively administered in Tetanus in horses and in the human species.

In man, nicotia has been highly lauded for this disease, and many cases seem to show its beneficial action. It must be given in man either by the rectum or hypodermically, as when put into the mouth it very generally excites a severe paroxysm, which may destroy life, by firmly fixing the muscle of the chest, till Asphyxia is produced.

In the horse, tobacco has been given by the mouth in the form of powder, by the rectum as an enema, and hypodermically as nicotine. Mr. D. Gresswell believed tobacco to be one of the most valuable remedies of the pharmacopœia in the treatment of Tetanus, and latterly he used it in almost all cases. Our experience also of the use of tobacco, in different forms, is very satisfactory, and we nearly always prescribe it now. Mr. Charles Gresswell, of Nottingham, has also found tobacco to be one of the most efficacious remedies as yet advocated for the treatment of Tetanus, and many other practitioners are also satisfied of its power in restraining the violent spasmodic seizures and of curtailing their duration.

Conclusion.

We have mentioned incidentally, in treating of the value of the several remedies, the ones on which we are disposed to have the most reliance in Tetanus, and we shall therefore not take up further space by repeating our opinion. But we should state that our deductions are drawn from a very careful analysis of more than two hundred and ninety cases of Idiopathic and Traumatic Tetanus, which have occurred in the practice of the late Mr. D. Gresswell, in our own practice, and in that of Mr. Charles Gresswell, as well as in that of other practitioners, who have either called in Mr. D. Gresswell, or have made known to us the special treatment adopted and its result. There is no doubt that rest and general management of the cases of Tetanus have a large part in determining the result, quite apart from the combination of remedies employed; and it is well known that some cases are from the first of so severe a nature that all treatment and care prove utterly unavailing. We believe that the largest per-

centage of cures may be expected where greatest care is taken, and a judicious combination of the most efficacious remedies administered.

We may, in this connection, mention that our analysis of the above cases leads us to have no faith in the efficacy of conium, conia, and but little in that of belladonna, atropine, and cannabis Indica.

We are disposed to regard nicotine, tobacco, morphia, aconite (in the early stage of severe cases especially), chloral hydrate, and hydrocyanic acid, as among the most efficacious remedies, and, as an adjunct, we value potash highly, as also, in some instances, the inhalation of chloroform.

We have little faith in physostigmia, as its effects are very transitory, while of amyl nitrite our experience is too limited to speak with any authority. Regarding the treatment of injuries, we believe authorities are agreed, excepting in cases of Tetanus following decking. It was the practice of Mr. D. Gresswell to re-dock in all cases following this operation.

We ought *to mention* that the bowels were kept open in the above cases by the administration of calomel, and in some by small doses of aloes in the first instance. Finally, we should add, knowing that the alkaloidal salts and other preparations vary much in their quality and strength, that we obtain a large number of our drugs from Messrs. Wright, Layman, and Umney, whose preparations are always of first quality and thoroughly reliable.

RUPTURE OF THE RECTUM IN A THOROUGH-BRED BROOD MARE.

BY A. J. MAC CALLUM, M.R.C.V.S., EDINBURGH.

AN urgent messenger came for me on the evening of March 4th, requesting me to at once visit a thorough-bred mare belonging to a client of mine (Mr. Y——, of B. B.), which was said to have been ill for four or five hours, and suffering great pain. I went off immediately to the place, which was about four miles away. On my arrival I learned that the mare was

nine months gone in pregnancy; had been in her usual health till about midday, when she was noticed getting up and down, and, seemingly, in pain. Thinking she was only slightly griped, they took little notice at first.

I found the mare in a loose box. She was looking very haggard, trembling a little; legs and ears cold; mouth clammy; mucous membranes pale; a running-down pulse, and abdomen slightly tympanitic. She looked wistfully round at her flanks, pawed a little, and seemed to have great pain. I at once gave her a powerful anodyne draught to relieve her pain, while I proceeded with my examination and inquiry as to her history. I learned that she had been used as a brood mare, and the dam of a good stock; that she had always been healthy up to that day. She had been getting the usual food, viz., corn and hay, and a little boiled food at night; that she was led out every day for exercise. While being led out that morning she seemed duller than usual, but showed nothing calling for special notice. I also learned that she had got a fright about ten days previously, when going out at the stable door, and had an ugly fall. She got up and walked away, seemingly none the worse, and those who saw it thought no more about it. I attached great weight to the fall, and proceeded with my examination. I found on passing my hand along the vagina, to ascertain the condition of the uterus, the os dilated sufficiently to admit my three fingers; the animal strained a good deal while I was doing so. I next passed my hand into the rectum. I found the passage loaded with rather dry, broken fæces, which I proceeded to remove. I had cleared out the passage to the extent of twelve inches or so. To my horror, I found the bowel was quite ruptured, and only attached by a mere rag of membrane on the left side at the part indicated. The fæces were quite filling up the pelvic cavity. I cleared it away, and everted the free end of the bowel, which I found bore traces of having been badly bruised, and seemed as if it had been rent. I then proposed to myself what I could do for the best, in the circumstances. My first idea was to make a new attachment for the free end of the bowel within the sphincter, but finding the fæces all scattered about within the abdomen, I

concluded that would be useless. I told my client that the mare's case was hopeless. He inquired whether nothing could be done to save the foal. I answered that seventh-month children often lived, and did well. If the fœtus was still alive, it might be worth the experiment to try and save it. I found on examination that it was all "alive and kicking." I at once put the mare under the influence of chloroform. When I had her completely under it, I made a smart section along the linea albi, released a very handsome colt foal from the womb and its appendages, rolled it up in a hot blanket, and carried it away to the front of the kitchen fire, giving orders to have the mare at once destroyed by a knock on the head, which was done. The foal was comatose for five or ten minutes, when it became all right. It seemed much finer in the coat than a full-matured foal; otherwise it looked very well. I gave directions about its maintenance. I have since learned that it only lived three hours. I made a *post-mortem* examination of the mare. This revealed nothing but the peritonitis and the rectum much discoloured. All the other organs were quite healthy.

As I am rather in a difficulty about the cause of the rupture, I submit the above particulars in the hope that some of our learned friends will clear it up.

I am of opinion that it was caused by the fall at the stable door ten days previously. But, then, how did the animal continue to eat her usual food, take daily exercise, pass fæces, micturate, and seem otherwise in good health for the intervening ten days between the accident and the fatal illness on the day of my visit?

COCAINE IN VETERINARY SURGERY.

BY G. GARTSIDE MAYOR, M.R.C.V.S., KIRKHAM, LANCASHIRE.

NEW appliances are too frequently either regarded askance, or extravagantly lauded. Perhaps I may be accused of the latter, but as I have recently used this alkaloid with the most complete satisfaction, I lay my experience of it before the profession, and shall be only too glad if these few remarks may induce other veterinarians to give it a trial, when they will, I feel sure,

endorse Mr. Whitfield's opinion—that it "supplies a long-sought requirement."

My attention was called some weeks ago to a shorthorn cow, that had "something growing in her eye." On examination, I found a fleshy-looking tumour, *apparently* about the size of a Spanish nut, in the inner canthus. As the beast was not far from calving, I recommended palliative treatment for the time being, proposing to cast my patient after parturition, and operate under chloroform. Meantime I heard of Cocaine, and having procured some from Messrs. Hewlett, I tried a small quantity in the eye of an old pony of mine, and subsequently on the inner surface of my own lip; in each case producing entire local anæsthesia. I therefore recommended the trial of it to my client, who at once consented. In the interim the pterygium had largely increased in size, and now extended almost the entire length of the free margin of the lower lid, causing a great deal of irritation and discharge.

Having secured the animal's nose with "bull-dogs," I painted the whole surface of the eye and lids freely and repeatedly with a five per cent. aqueous solution of Cocaine. As soon as anæsthesia was thoroughly established, I passed a suture through the tumour as low down as I could; this unfortunately tore out, but not before I had time to see that the morbid growth extended to a considerable depth.

I then seized it with the forceps, and succeeded in snipping off some portions with curved scissors; then, by pressing the eyeball gently back in the orbital cavity, I was enabled to firmly grasp the base of the tumour, and finally excise it. During the whole course of the operation, the animal only gave occasional slight evidences of uneasiness. Free fomentations and anodyne collyria were applied, and the eye shielded from the light.

There was considerable tumefaction of the eyelids and opacity of the cornea for some days, the result of the somewhat protracted manipulation, as also a purulent discharge, but these symptoms soon subsided.

I look upon this case as a severe, and most satisfactory, trial of Cocaine. Without it, operation would simply have been impracticable, except with the aid of chloroform.

The extremely high price of the drug—two shillings per grain—is unfortunate; still the cases requiring it are not of every-day occurrence, and so far as my first experience justifies me in pronouncing upon it, the expenditure is far more than repaid by the satisfaction attending its use.

I sent some portions of the growth to the Brown Institution for microscopic examination.

Editorial.

THE FELLOWSHIP DEGREE OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

It is now nine years since the Council of the Royal College of Veterinary Surgeons applied for, and obtained, a Charter, empowering the Body Corporate to hold its annual meetings in London, Edinburgh, or Dublin, to remove the names of members from the register, to appoint a Registrar and Secretary, to hold land, and more especially to grant the higher degree of Fellow to members on certain conditions, as also the right to confer the degree of Honorary and Foreign Associate of the College. From the prominence given to the Fellowship degree in this Charter, it would almost appear as if it had been the chief object desired in asking for such an instrument; and there can scarcely be any doubt that this was so For a very long time it had been felt by those who aspired to see the profession on a higher and a more progressive footing, and more closely assimilated to the professions of medicine and surgery, that a superior degree to that of member should be instituted, in order to engender a spirit of emulation, particularly in the younger members, and induce them to continue those studies which they had commenced at the veterinary schools, and the continuation of which is really absolutely necessary, if progress is to be maintained and advantage taken of increasing knowledge and new discoveries. Hitherto, there had been no material inducement for any member to work in this direction; for after receiving the diploma of membership, nothing more could be obtained to mark further progress, or to show that the elementary knowledge gained through the aid of teachers had been largely added to by individual labour and acquirement, and more or less perfected by practical experience gained in the everyday round of business. It was considered that it would be the laudable ambition of a large majority of members to raise themselves to the higher level in the course of time, and thus testify to the world that they did not become recipients of the membership diploma from mere mercenary motives, but from a deep regard for science and humanity, and a determination to enhance the value of their services to the public.

We are inclined to believe that it was this praiseworthy impulse which mainly prompted the Council to apply for the Charter alluded to, and

that led to strong hopes being entertained of great advantages resulting from its obtainment. But it was evidently felt, also, that members who had laboured to qualify themselves for the higher degree, and by their merits had achieved it—while by so doing they had given proof of their zeal and ability and loyalty to their calling—deserved to have privileges and rewards which those who had not qualified themselves could not claim, and which the Fellows had demonstrated they could put to the best use for the benefit of the entire community. It was consequently enacted in the Charter that none but Fellows were to be eligible as Members of Council or to serve on Boards of Examination; but, in order to give ample time for the profession to adapt itself to this new order of things, it was also ordained that this change was not to take place until the end of ten years from the date of granting the Charter. This long interval was supposed to allow a large number of members to avail themselves of the degree, by giving them opportunity for study; for it was stipulated that no member could be admitted a Fellow until he had attained the age of twenty-six years and practised his profession, or been a Professor in a Veterinary School, for not less than five years. In order to institute the degree, it was likewise ordained that within six calendar months the Council was to elect, without any previous examination, not more than five per cent. of the whole number of the Body Corporate, those so elected having been in practice for at least fifteen years. The grounds for such election were left to the Council to determine, and we believe within the time specified the percentage fixed upon formed what may be designated the Foundation Fellows. It is needless to discuss these grounds of election, or selection, as they will be found in the Proceedings of Council for 1876. Suffice it to say that these Fellows did not elect themselves, as has been stated, their election being made by the Council, the then members of which were exempted from the exclusion which was to apply to the non-Fellows. Certain fees had to be paid by the Fellows—ten guineas by those elected by the Council, and fifteen guineas by those admitted Fellows by examination. All this was done with the full cognizance of the profession at large, and, we believe, also with its full consent and approbation. At any rate, we do not remember hearing of any complaints as to what had been done, or any protests as to unfairness or impracticability. It was necessary to have Foundation Fellows; and that they were admitted without examination could scarcely be a cause for contention, inasmuch as there was no Board existing which could be said to be competent to examine them; and from their having been in practice for such a long period, their eligibility for the honour of election was well known. Since the Charter was obtained, a number of candidates for the degree have been examined, and nearly all who have presented themselves have been admitted, some of these having been members for several years before the Charter was obtained, and others entered since. We have reason to believe that the examination has not been very exacting upon the former, nor yet particularly severe for the latter; as it was felt that allowance should be made for those who had not sufficient time to prepare for what was a novel and unexpected ordeal—the object being rather to make the examination gradually of a

stringent and searching nature as years went on. There has been no attempt or desire whatever to exclude those who could satisfy the Examiners that they possessed a fair general education, and a sufficient knowledge of their profession to enable them to sustain the dignity and reputation of the degree.

In another year, the ten years *interregnum* will have expired, and the exclusive privileges belonging to the degree will come into operation. But in certain quarters an agitation is being stirred up against this exclusiveness, and efforts are being made to have this particular enactment of the Charter rescinded. Such agitation would be quite justifiable if it could be proved that the interests of the profession or the public would in any way suffer from the operation of the Charter; but this has not yet been shown. There has been no prohibition or obstacle thrown in the way of members availing themselves, in unlimited numbers, of the opportunity for obtaining the degree during the nine years that have elapsed since the Charter was granted, and it was well known, we fancy, that the severity of the examination was more prospective than actually existing. That more have not availed themselves of the degree is a matter for regret, and those who anticipated that it would have been more popular must feel greatly disappointed. It will now be a very lamentable and humiliating confession of professional apathy and lukewarmness if it should be decided to apply to the Government to cancel this provision of the Charter, on the plea that the degree has failed to elicit the aspirations of the profession towards a higher standard. It is evident that on taking the degree and paying the fees, those members who became Fellows entered into a contract with the Royal College by which they were entitled to certain specified privileges. If the contract is to be broken by the abrogation of these privileges, then, we fancy, those who are legally-minded would be ready to assert that the fees they paid should be returned to them.

We do not enter into a discussion as to the hardship or injustice of excluding members from the Council or Boards of Examination, as that should have been thought of when the Charter was applied for, or subsequently; while the remedy has always been in the hands of those who did not desire such exclusion. There are at present sufficient Fellows to carry on the duties for many years; and the evidence as to their competency and willingness to undertake these duties is shown in what they have already done in this direction, though they have never put forward any claims to superiority, or flaunted the higher degree aggressively or conceitedly in the face of those who did not possess it.

It is earnestly to be hoped that no change will be made detrimental to the honour, dignity, or good name of the profession in this respect, but that a means will be found for maintaining the degree in its entirety, and to render it, if possible, more attractive and praiseworthy, if need be. Our advancement is largely dependent upon the inducements we hold out to those among us who, possessing ability and vigour, yet require a stimulus to work, and some proof to show that they have worked. It is the hope of reward that sweetens labour; and as the rewards our poor profession can offer are few indeed, it would be a pity if they were dimin-

ished by the profession condemning the action it took nine years ago, committing a breach of contract with those of its number who have shown the best possible spirit towards its advancement, and bringing ridicule upon itself by confessing that it has no desire or ambition to testify that it can get beyond the degree awarded to a three-years' student.

MEAT INSPECTION.

WE have for years insisted upon the necessity for employing only competent veterinary surgeons as flesh inspectors, instead of medical men and others who are unfitted for such an important duty. In many of the Continental States this necessity is fully recognised and acted upon, and the inspectors of butchers' stalls and abattoirs are well-trained veterinarians. Spain is a country which is supposed to be rather backward in sanitary affairs, but now it is ahead of us in this respect. The *Lancet* informs us that the veterinary surgeons of the province of Cordova, having complained to the Spanish Royal Council of Health because the local authorities had appointed as inspectors of food two medical men, instead of members of their own body, whom they considered best fitted for such duties, the Royal Council replied that there was no doubt that veterinarians ought to be appointed to inspect meat, but that there was no law, and not even a uniformity of custom, concerning the appointment of inspectors of other articles of food. It was, however, a subject which ought to be settled, and therefore the Council resolved to advise the Government to make the following regulations :—(1) That the inspection of warm-blooded animals, alive or dead, fresh or preserved, should be exclusively in the hands of veterinarians ; (2) that the inspection of all other articles of food sold in markets, including cold-blooded animals, should be committed indiscriminately to medical men or to pharmacists ; (3) that both classes of inspectors be irremovable from their posts, except for grave cause. The Royal assent was given to the above-mentioned recommendations, which have just appeared in the *Official Gazette*.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

MEETING OF COUNCIL, HELD APRIL 7TH, 1885.

Mr. H. J. CARTWRIGHT in the chair.

Present:—Sir F. Fitzwygram ; Professors Pritchard and Robertson ; Messrs. Wragg, Perrins, Dray, Whittle, Woods, Simpson, Greaves, Taylor, Santy, Cartledge, Cox, Cartwright, and the Secretary.

The SECRETARY read the notice convening the meeting.

Letters regretting their inability to attend the meeting were read from the President and Messrs. Blakeway, Borthwick, and Simcocks.

The minutes of the previous meeting were taken as read.

Correspondence.

A diploma was signed in favour of Mr. J. D. Rose, holder of the Highland and Agricultural Society's certificate.

A letter from Mr. James Mills, V.S., of St. Thomas's Mount, Madras, relating to the educational question, was ordered to be laid on the table until a further reply was received.

A letter was read from Mr. S. W. Vines, of Tunbridge Wells, requesting assistance. The Secretary was directed to reply that the Council were unable to assist him.

Examinations.

The Report of the Examinations in London and Scotland was read.

The SECRETARY announced that the Royal Agricultural Society's silver medal had been awarded to Mr. F. T. Harvey, and the bronze medal to Mr. C. Heinemann.

House and Building Committee.

This report was read, showing that an estimate for rebuilding No. 10, Red Lion Square had been accepted, at a cost of £2,675; also that part of the furniture, specimens, books, and papers had been warehoused.

A letter was read from Professor Walley suggesting that a foundation-stone should be laid for the new building on the day of the annual meeting.

Mr. DRAY, speaking as Treasurer of the College, protested against any expense being incurred in connection with laying the stone. The College, he said, must husband their resources as much as possible.

Mr. SIMPSON thought it advisable to have the ceremony of laying the foundation-stone on the afternoon of the day of the annual meeting.

Several members approved of the ceremony taking place.

Mr. CARTLEDGE proposed that a circular be sent out along with the report of the annual meeting, containing an announcement that the foundation-stone would be laid in the afternoon.

Mr. PERRINS seconded the motion, which was agreed to.

Registration Committee.

The SECRETARY read the Report of the Registration Committee, and informed the Council that a practitioner had been struck off the list through obtaining registration under false pretensions.

Finance Committee.

The Committee reported that the purchase of the redemption of land-tax of No. 10, Red Lion Square had been effected for the sum of £110 10s.

On the motion of Professor PRITCHARD, seconded by Mr. SANTY, the report was received.

Mr. TAYLOR proposed that the balance-sheet be passed, and the cheques drawn for the liabilities.

Mr. WOODS seconded the motion, which was agreed to.

The Report of the Dinner Committee was read.

The REGISTRAR read the Obituary Notice.

Mr. WRAGG said the National Veterinary Association were very anxious to fix the date of their meeting, and in order to prevent its clashing with the examinations, he wished to ask when the summer examinations would take place.

The SECRETARY said he thought the best time would be about the latter end of July.

Professor PRITCHARD thought the time had come when the date of the examinations should be permanently fixed, so that the Examiners might know when their services would be required.

The SECRETARY said he could not summon the Examiners until he knew the exact number of candidates coming up for examination in each class.

Mr. WRAGG gave notice that at the next meeting he would move "That a Committee be formed to take into consideration the fixing of permanent dates for the several examinations of the Royal College of Veterinary Surgeons."

On the motion of Mr. CARTLEDGE, seconded by Mr. TAYLOR, the Secretary was empowered to nominate scrutineers of the ballot.

Mr. Cox and the Secretary were instructed to draw up a circular to be sent to every member of the College, requesting subscriptions to the building fund.

The SECRETARY read a list of nominations for Members of Council.

This concluded the business of the ordinary meeting.

SPECIAL MEETING.

MR. COX, in moving "That it be eligible for any Member of Council or Vice-President to attend any of the examinations held by the Royal College of Veterinary Surgeons, such attendance to be optional and to be prearranged from time to time with the Secretary," said he had for some years felt that the Members of Council, on whom devolved the duty and responsibility of electing the Examiners, should have the opportunity of becoming personally acquainted with the working of the examinations. He did not wish to put the members to any personal inconvenience or expense in attending the examinations, but if some of them had done so during the last two or three years they would have recognised at once whether there was any ground for suggesting that the increased number of rejections was due to the over strictness, or unfairness, or fads of certain Examiners. Such suggestions had produced a very ill effect upon the students. He was sure that the Examiners would be pleased to see Members of the Council present at the examinations. There was another little matter that he ought to mention. The Freemasons' Hall, Edinburgh, had been *pro tem.* the habitation of the Royal College of Veterinary Surgeons; but without the Council or Examiners being consulted, it was decided that the examinations should be held at the several colleges in Scotland in turn. The Examiners had no reason to apprehend anything but what would be perfectly satisfactory, and he held that the examinations should be entirely independent. If the Examiners found that they were in any way less independent than formerly they must again appeal to the Council in order that they might once more resort to the room that had answered so well on former occasions. There was one other matter which he thought the Council should be kept *au courant* with. It had been the practice to hand the diplomas to the successful candidates on the night of the examination, but great inconvenience had been found to attend that method, for students standing on the stairs knew at which tables they would be rejected. The result was that an Examiner had been insulted, and an insult to one was an insult to all, and also to the Council. He would suggest that notice should not be given to the successful candidates until the end of the examinations.

Mr. DRAY seconded the proposal. He was certain that the Examiners were gentlemen of unsullied honour and integrity, and that their aim was to do justice to the profession as well as to the pupil. He had been credibly informed that the examinations had been conducted in a very accurate way, and the Examiners deserved the support of the Council in every possible way.

Mr. TAYLOR wished to ask Sir Frederick Fitzwygram whether if any Member of the Council thought proper to attend the examinations he would be admitted. The proposal now made was a step in the right direction. It had been said that the practical examinations especially depended on fads and caprices, and it was highly essential that the Members of Council should see for themselves whether there was any truth in such a statement. He should support the motion with all his heart.

Sir FREDERICK FITZWYGRAM said he was not quite certain whether Members of Council might as a matter of right attend the examinations, but

when he was President he made it a point to go to both the examinations, and as he was admitted he imagined that he had a right to go. He thought it very desirable that Members of Council should be present, except in one respect, for he strongly objected to professors and teachers of schools attending, and as several Members of Council were also teachers, there might be some difficulty.

Mr. CARTLEDGE fancied that Members of Council were *ex-officio* members of the Board of Examiners.

Mr. SIMPSON quite agreed with the object of the resolution, but was a little in doubt as to its practical working. On one occasion a great number of Members of Council might attend, and on another all might stop away. Would it be possible to add a by-law to the effect that gentlemen desiring to attend should send in their names to the Secretary?

Mr. TAYLOR said if the names were given in they might be arranged alphabetically, and taken two and two in rotation.

Mr. WHITTLE suggested the appointment of a Committee to attend the examinations.

Mr. GREAVES said he remembered an occasion during his presidency when a Member of Council was told by the Examiners that he was not eligible to be present. Exception had been taken to the examinations being held at the colleges in Scotland, but it was done from motives of economy, for it cost a great deal of money to hold them at hotels, where policemen had to be engaged to keep order. He was sorry to find that one of the Examiners complained of that arrangement.

Mr. PERRINS approved of Mr. Cox's proposal. At each meeting of the Council previous to an examination it might be decided which two members might attend.

Mr. CARTLEDGE proposed that the words, "That it be tried as an experiment for one year," be added.

Mr. SANTY seconded this proposal.

Mr. COX said he should have no objection to the addition.

It was directed that the resolution be acted upon forthwith, and to be in operation for one year from this date (7th April).

Sir F. FITZWYGRAM moved: "That a Committee be appointed to consider as to the advisability of drawing up a Bill on the subject of the law of warranty." He said this motion referred to a subject about which there was a good deal of difficulty—namely, the amendment of the law of warranty. That law was at the present time in a very unsatisfactory state. As regards the public, there could be no question that it was unsatisfactory, and as regards the profession it was unseemly, leading to constant disputes between veterinary surgeons engaged on one side or the other. It was such a difficult subject for legislation that he only ventured to ask for a Committee to consider it. Of course it would be impossible to settle the controversy as to the period at which diseases were latent or incipient, but he thought there were three general principles which the Committee might consider, and if possible, work up into such a form that they might be passed into law. The first would be to legalise in this country the Irish system of warranty, by which it was understood that if nothing to the contrary was said, the buyer had a right to take a veterinary surgeon's opinion within forty-eight hours, and if it was unfavourable, return the horse. That was the accepted custom in Ireland, and he thought it would be well if it were legalised throughout the kingdom. He did not think it would work unfavourably to the veterinary profession. It would also be possible to come to a general agreement as to certain periods within which horses affected by particular diseases might be objected to by the purchasers, as for instance, in the case of exostosis. The third point

which he thought would be very useful, would be to define, in some way or other, what constituted soundness. His own opinion was that it must be divided under two heads—absolute soundness, and soundness for the purpose for which the buyer required it ; and a veterinary surgeon should in all cases specify to what degree of soundness his certificate referred. At present nothing was more common than for a veterinary surgeon to get into disrepute, because after he had passed a horse as sound for a certain purpose it was put to quite another and went lame. If some definite lines such as these were laid down by law, they would be very satisfactory both to buyers and sellers. It was not necessary to hurry forward the matter, for even if the Committee decided on recommendations it would be impossible to do more than print the Bill during the present session.

Mr. WHITTLE asked if the Act could not be so framed as to protect the veterinary surgeon in giving his opinion.

Sir F. FITZWYGRAM thought he was *ipso jacto* protected.

Mr. GREAVES said he was very pleased that Sir Frederick had brought this matter before the Council, and he entirely approved of the views that had been laid before them. Veterinary surgeons were at present liable to a great extent in courts of law for the opinions they had given, and he hoped that that state of things would be remedied. He would have great pleasure in forming one of the Committee.

Mr. CARTLEDGE said it was more important to define what was soundness or unsoundness than to alter the law of warranty. Nine-tenths of horses of any value were examined by members of the profession at the time of sale, and he had not seen a written warranty for some years, the law relating to it having practically ceased.

Mr. PERRINS said that he also had not seen a warranty for some years, and if the practice of giving it were dropped altogether, it would be a great advantage both to purchasers and sellers. Every opportunity should be given to a buyer for his chosen veterinary surgeon to examine a horse. In the case of valuable shorthorns and Herefords, examinations were always allowed and no warranty was asked for or expected.

Mr. DRAY said he had ascertained that in Yorkshire a warranty was scarcely ever given with horses, but they were examined by veterinary surgeons.

Mr. SANTY presumed that every member of the profession gave his opinion honestly, and it was very hard that he should be mulcted in damages if it turned out incorrect. Steps ought to taken to have the law altered in this direction.

Mr. SIMPSON said if the proposal had been brought forward by any one except a gentleman in Sir F. Fitzwygram's position, he should have despaired of its ever being taken up at all. Every practical man knew that warranties were very rarely given, and if they were, they were not considered of any value. He had not the least doubt that the Council would agree to the formation of a Committee; and, if so, it was a matter of very great importance to define soundness. Many men did not care about a horse being sound in the strict sense of the word ; what they wanted were useful horses, and if the veterinary surgeon took care to point out the deviations from soundness he was likely to be safe. The whole question bristled with difficulties, but it was a great consolation to know that members of the profession were more frequently consulted about the purchase of horses than they were formerly.

Sir F. FITZWYGRAM said he quite agreed in the desirability of abolishing all warranties, because it would lead to the same state of things as in Ireland, where there was no dispute about the decision of a veterinary surgeon. The certificate should state for what purpose a horse was "usefully sound," if it was not "perfectly sound." He was once asked by a gentleman

to find him a horse, for £40, suitable for his wife to drive in a four-wheeled carriage. The gentleman added that it must be one on which he could ride twenty-five miles on a summer's evening, and to hounds twice a week. Similar requests constantly occurred. If the Committee succeeded only in abolishing all claim to warranty he should be quite content.

Mr. CARTLEDGE said that formerly when warranties were given without examination, it might turn out, some time afterwards, that a horse had a well-defined bone spavin, and then, in a court of law, veterinary surgeons would be called on both sides to give their opinions as to how long it had existed. The result in such a case might be that the wrong side won, and great odium was, in consequence, thrown on the name of veterinary surgeon.

Mr. SIMPSON said that half the hunters and hacks sold in London were warranted, but many persons advocated arbitration in all horse cases, and in several instances he had been called in to settle such disputes.

Mr. PERRIN said it was thoroughly understood that at sales a "good hunter," when warranted, must be good in wind and eyesight, but he did not know that a "good hack" must necessarily be sound with regard to lameness.

On the motion of Mr. DRAY, seconded by Mr. WHITTLE, the following gentlemen were appointed on the Committee: Sir F. Fitzwygram, the Principals of the Schools, Professor Pritchard, Mr. Cartwright, Mr. Simpson, Mr. J. R. Cox, Mr. Perrins, and Mr. Greaves.

It was agreed that the annual report should be drawn up by the President, Treasurer, and the Secretary.

Mr. SIMPSON gave notice "To move for a Committee to inquire into the operation of Clause 9 of the Supplemental Charter of August 23rd, 1876, and to report thereon to the Council."

Mr. SIMCOX's motion was withdrawn till the next meeting.

Mr. DRAY moved a vote of thanks to the Chairman.

Mr. PERRIN seconded the motion, which was agreed to.

The proceedings then terminated.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE Annual Meeting of this Association was held at the County Hotel, Newcastle-on-Tyne, on Friday, 27th February, 1885, the President, G. Elphick, Esq., in the chair.

Present:—Mr. W. J. Mulvey, Bishop Auckland; Mr. J. B. Nesbit, Fence Houses; Mr. J. E. Peel, Durham; Mr. D. Dudgeon, Sunderland; Mr. H. Peel, West Hartlepool; Messrs. D. McGregor and Marsden, Bedlington: Mr. J. Gofton, North Shields; Mr. W. Grieve, Blaydon; Mr. W. Anderson, Hexham; Mr. W. Awde, Stockton; Mr. J. Bulman, Morpeth; Mr. G. Farrow, Jun., Durham; Messrs. C. Stephenson, H. Hunter, A. Hunter, W. W. Smart, and the Secretary, Newcastle-on-Tyne.

There were also present as Visitors:—Professors Williams and Lewis, Edinburgh; Messrs. L. Potts and J. Donald, Wigton; Mr. J. Scriven, Aberford; Mr. J. Borthwick, Kirkliston; Mr. T. Jack, Sunderland; Mr. R. Brydon, Seaham Harbour; Mr. R. Bruce, Great Smeaton; Mr. R. Tinsley, Malton; and Mr. J. Borthwick, Jun., Newcastle-on-Tyne.

The minutes of the previous meeting having been confirmed, Mr. Marsden, Bedlington, was unanimously elected a member of this Association.

The late Secretary and Treasurer, Mr. W. W. SMART, Newcastle-on-Tyne, then made his annual report, which showed the Association to be in a highly satisfactory state.

The PRESIDENT remarked that at a conjoint meeting of the Scottish

Veterinary Societies, held in Glasgow on December 24th, 1884, it was arranged that they would join with this Association in endeavouring to return candidates at the next Council Election.

Mr. DUDGEON proposed that all arrangements in connection with the next Council Election be left to the Committee formed for that purpose.

Mr. Mulvey was then unanimously elected as the candidate to represent this Association at the next election.

Mr. DUDGEON gave notice that, at the next meeting, he would propose that the hour of meeting be, in future, altered from four to three o'clock.

The PRESIDENT then read his Inaugural Address, as follows:—

GENTLEMEN,—I beg to thank you most sincerely for the high honour which you have conferred upon me by electing me your chairman for the ensuing year. I think you might, with benefit to this Association, have elected some one older and a more worthy member to fill this chair. However, since it is your wish that I should hold this important position, I place myself in your hands, and hope you will kindly look over my shortcomings.

The great difficulty I have in addressing you, is to find something that has not already been debated at this and kindred associations. This being so, I must apologise if I should, at times, walk upon the beaten track.

You are all aware that this, and I may say, all Veterinary Medical Associations, are established to promote the social status of our profession; to create a good and friendly feeling amongst our professional brethren; the protection of our professional interests, and the reading and discussion of subjects relating to veterinary medicine and surgery, and, I think, I may with confidence say, to do good to our fellow-creatures.

How are these good intentions best brought about? By each and every one of us uniting together and doing our very best, not only for our own individual benefit, but for the benefit of the whole profession; and we ought at all times to be ever willing to assist each other in this great struggle of life. We should always make great efforts, and at times sacrifices, to attend these friendly meetings. It is only by regular attendance that we can ever hope to do good to ourselves and the profession. To do good to ourselves, we must enter freely into discussion upon the various subjects brought forward. Imparted knowledge never diminishes learning's store, but on the contrary, we find the more we know, the more we have to learn.

There are many obscure and intricate diseases affecting man and animals which are worthy of our investigations. Hence the necessity that we should be always anxious and ready to meet each other in friendly consultation and discussion, to try, if possible, to elucidate these apparently impossible problems.

We have, also, our Veterinary Parliament to look after, and carefully watch that our privileges are not encroached upon; and that our governing body should know our opinions upon the different subjects brought forward for discussion at the Council Board. We can only accomplish this by attending these friendly meetings, and, if necessary, petitioning, or by deputation, expressing our views to our governing body, who, I am sure, are ever willing and anxious to have our opinions; and should our opinions not coincide with theirs, I am confident they will give them their careful consideration.

Acknowledging the fact of the necessity for the profession being more united, and that the only way by which this can be done, is through the different Veterinary Medical Associations, I do sincerely hope, one and all will do your best to attend these meetings, and that any of you who have professional brethren, who are not members, you will not be long in inducing them to become enrolled. I should like to see more of our members belonging to the National Veterinary Association, and I earnestly appeal to

those who have not joined to do so as soon as possible. Not that many will be able to attend their meetings, but by lending a helping hand, you will indirectly assist in promoting the interests of the profession.

Looking at the past, many important changes have taken place in our profession, especially during the last few years. Upon some of the most important subjects there has been great diversity of opinion; but I can say, with the greatest confidence, that these oppositions have been honest ones, and I sincerely hope have been the means of doing a large amount of good and the cause of us becoming more united.

It is to be hoped that the recent Veterinary Surgeons' Bill will be the great success that the majority of the profession wish it to be. Time only will prove this. At present, many of our professional brethren are labouring at a great disadvantage, in consequence of existing practitioners being allowed to subscribe themselves as Veterinary Surgeons. Consequently, in many districts, qualified men are obliged to work at a very small remuneration for their services. This may also be partly due to competition amongst ourselves; we are all so very anxious to do all the work, and leave nothing for our neighbour, that many adopt the cutting-down process. I believe in some districts competition is so great, that many are obliged to accept the small remuneration of sixpence per mile for their services. Fancy a qualified professional gentleman going a distance of five miles for the magnificent sum of half-a-crown—not ordinary cab fare; and I am sure more money would be readily paid by a commercial traveller for the use of the horse and trap, without our professional attendance. I maintain this is a grave mistake, and I am afraid it is greatly due to want of confidence in ourselves. Why should we keep ourselves in poverty for the sake of doing our professional neighbour out of a client? We had far better only do half the work, and get a fair remuneration for our services, as to do double, and have poverty continually walking in our track. I am sure the public will think none the less of us for charging what is fair and reasonable. In fact, I am certain we should rise in their estimation. I seriously think we ought to do something in this direction; and, if my humble services are of use, I shall be only too glad to place them at your disposal. With regard to the future, there are many subjects that will require our careful consideration. I, for one, would like to see a Bill introduced for the better representation of our profession at the Council Board. We have had the franchise in the existing practitioners, but fortunately they have no vote or voice in our deliberations. The whole of the profession ought to be represented at the Council Board. At present, several districts are left out in the cold, and, I am afraid, under the present system, they will remain so. Each district ought to have its representative, or let each Veterinary Medical Association as representing a certain district, send a representative, and, in certain cases, where they have a larger number of members, two. At present, the North of England and the South of Scotland have no representative; and I believe other distant parts are similarly situated. It may be urged that members, living in these outlying districts, if elected, could not attend on account of the distance, and the time it would occupy in going to London. Undoubtedly this is a great drawback, and is the reason why many good men will not allow themselves to be nominated for election; but I am certain there are many able and willing members, resident in the North of England and the South of Scotland, that would think no sacrifice too great if they thought they were doing good to their professional brethren.

During the past few years, we have nominated two gentlemen to represent us without success. However, we do not intend to remain idle, but will continue to try until we do succeed. I do hope we shall succeed this year, and I earnestly appeal to the members of the profession to lend us a helping

hand on this occasion to return our nominee, Mr. W. J. Mulvey, Bishop Auckland.

Next year (1886) M.R.C.V.S. will not be eligible to serve, as members of Council, none but Fellows will be allowed to sit at the Council Board. I am not a prophet, but I have serious doubts as to its success. Not that our Veterinary Parliament will not be able to go on as before, but I think there will be a great deal of dissatisfaction. I ask, is it wise to have no one but Fellows (there are about one hundred on the register) to select our members of Council from? I have nothing to say against any Fellow, and I consider the Fellowship a step in the right direction; but there are many good men, members, who have not the time at their disposal to prepare for the Fellowship Examination, who, if elected as members of Council, would do an honour to the Board and a credit to the profession. We shall continue to have the same voting power, but I think it would be to the interest of the profession, if a certain number of members were allowed to sit at the Council Board.

The Contagious Diseases (Animals) Act is, at last, proving itself the great success the profession have always predicted, if properly carried out. I think a great deal of the credit is due to the profession for this success. At the same time, we must not forget that a large share of the honour is due to gentlemen outside the profession, for the manner in which they have taken this question up, and by their assistance carrying it to its present success, and also for the very handsome manner in which they have supported the veterinary profession.

There has, unfortunately, been within the last few days, two or three importations of Foot-and-mouth Disease from Germany. It is to be hoped it will not spread. Up to the present time, we have had no outbreak in this country since last December, and I think, with the precautions that are now being taken by the Veterinary Department of the Privy Council, it will be a long time before we shall see this disease again, if ever.

The recent Order of Council relating to the control of persons looking after animals suffering from contagious diseases, and the clothes to be worn by the attendants, is a great stride in the right direction. I am confident that the clothing worn by attendants has been the cause of many serious outbreaks of Foot-and-mouth Disease.

Cow byres, milk shops, and our milk supply, I consider one of the most important topics of the day, especially so when we consider the large consumption of milk by our infant population, and the great risks they run from impure and contaminated milk. I seriously think a great deal of good can be done by adopting more stringent measures against cow byres and milk shops; undoubtedly great improvements have been made, but still a great deal more requires to be done; and we, by giving expression to our opinions, may be the means of hastening a better state of affairs.

How often do we read of serious and fatal outbreaks of disease amongst human beings due to contaminated milk; and how often do we, when making professional visits, come across cow byres kept in a most filthy and unsanitary condition, with bad surroundings! I have no hesitation in saying that, if most of the malignant and obscure outbreaks of disease were thoroughly investigated, their origin would, in many cases, be traced to the cow byres or milk shops; and very often to want of care and precaution in outbreaks of disease amongst the dairyman's family. Why the latter should occur, I cannot understand. We take it for granted that as soon as disease breaks out amongst the family, their medical adviser is called in. He diagnoses the disease to be Diphtheria, Scarlatina, etc., and knowing the danger of these diseases being so easily transmitted by milk, one would naturally think he would at once stop the milk supply, see that the milk was

not brought into the house, or that the inmates were kept from being in contact with the milk, directly or indirectly. I do not wish to insinuate that all medical men do not take these necessary precautions; but if these precautions were taken, does it not seem strange that when we do have serious outbreaks of these diseases and loss of valuable lives, that upon investigation it is generally found out that the milk has been supplied by a certain dairyman, whose family, or some members of his family, are suffering from Scarlatina, Diphtheria, etc.?

As a preventive against these outbreaks, I would advocate that all byres and milk shops that are badly drained and ventilated, and where the surroundings are not good, should be closed; that light, air, good water supply, and good situations, free from any deleterious influences, should be a *sine qua non*.

No milk or milk utensils should be allowed to be kept in a dwelling house, and each byre and milk shop should have a separate existence. I would also urge that no milk utensil from a house where any contagious or infectious disease exists, should be allowed into a milk shop, or to mix with other milk cans. To avoid this, private cans should be abolished. Let each customer have his milk measured at the door. I am confident that in many instances the mixing of milk cans is the cause of a great deal of mischief.

I believe the time has now arrived when all byres and cows should be regularly inspected by a veterinary surgeon, and that any cows found not to be in a perfect state of health should be isolated, and the milk from these animals destroyed, especially if the animal shows the slightest tendency to tubercular disease; and should it be a confirmed case of Tuberculosis, the local authorities should have power to have the animal destroyed. I also think the local authorities should have power to stop the sale of milk from cows suffering from any infectious or contagious disease. Most of you will have read Professor McCall's paper on "Food Supply," read before the National Veterinary Association last year, at Manchester; and his extracts from a paper read by Dr. Robinson, at the Annual Meeting of the East Kent District of the British Medical Association, on an "Outbreak of Epidemic Sore Throat following the use of milk from cows suffering from Aphthous Fever." This paper proves, most conclusively, that milk from cows suffering from Foot-and-mouth Disease, is not fit for human consumption. I believe that our friend, Professor Walley, holds "that in Foot-and-mouth Disease, no harm can ensue from the milk if there are no udder lesions." I believe that prevention is better than cure, and where valuable lives are at stake, is it wise to throw a chance away?

With regard to what is, and what is not, fit for food, as applying to the flesh of animals, it is very difficult to lay down a hard and fast line, so much depends upon personal inspection, and it is here that I think a veterinary surgeon is pre-eminently the only person whose opinion should be accepted. At present, the Medical Officer of Health is appointed to give the verdict. I would ask, what do medical men, as a rule, know of diseases in animals? Where have they obtained their knowledge? and, in what part of their curriculum are they taught the diseases of animals, their post-mortem appearances, and meat inspection?

Recently the Medical Officer of Health for this city wrote a letter to the *Lancet*, upon this very important subject, and, according to his ideas, he would call in the veterinary surgeon as an expert, to inform the medical officer as to the disease the animal had been suffering from, so as to enable him to give a correct opinion as to the fitness of the flesh for food. If this is the opinion of the medical profession, that a veterinary surgeon should be called in as an expert, a veterinary surgeon's opinion ought also to be taken in preference to the medical officer, as to the fitness of the flesh for food, or not.

Veterinary surgeons, being conversant with the diseases of animals, should act as meat inspectors. Their knowledge enables them to ask many important questions, when inspecting a carcase, especially when the internal viscera have been removed or destroyed; also, as to the animal's history and symptoms previous to being killed, which will enable him to give a correct opinion. How often do the owners say the animal has been choked; and to save its life they killed it, when on careful inquiry and examination by a veterinary surgeon, he has proved the carcase to be unfit for food from Anthrax, or other similar disease, which would otherwise have been passed as fit for human consumption.

I believe, on the Continent, veterinary surgeons are regarded as specialists on these subjects; and most Continental Governments recognise the fact that the health and wealth of the people greatly depended upon the healthy state of the milk and flesh consumed. This should have more recognition from our Government and our local authorities, who seem very lax upon these very important subjects. I am afraid we veterinary surgeons cannot do much to force our views upon the authorities, but indirectly through the press and the public, we may hope to be instrumental in doing a large amount of good.

There are many things which ought to be done. Amongst these, private slaughter-houses should be abolished and the local authorities compelled to establish abattoirs under veterinary supervision. No doubt this change would at first cause a great deal of trouble and annoyance, and would necessitate a large expenditure; but I am confident it would strike the evil at its foundation, and the public would have a guarantee that what they were eating was good and wholesome.

In large towns like Newcastle, an experienced veterinary surgeon should be appointed as chief inspector over our cattle market, abattoir, cow byres, and milk shops. He should have an efficient staff under him, who, before being appointed, should undergo a rigid practical examination. Until this is done, the present unsatisfactory condition of affairs is sure to continue. I have nothing to say against the present staff of inspectors in Newcastle. I believe them to be trustworthy, and I have no doubt they try to do their best, but it is impossible for them to do their duty, as they have received no special training. They know nothing, or very little, about the use of the microscope, and the influence of disease upon the tissues of the body. Until they do, they ought not to be appointed as guardians of the public health.

(To be continued.)

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

Office-bearers for the Year 1885.

President: J. W. T. Moore, Esq., Birkenhead; *Vice-Presidents:* Mr. R. Reynolds, Mr. T. Simpson, Mr. R. C. Edwards. *Treasurer:* Mr. George Morgan (re-elected). *Secretary:* Mr. Edward Kitchin.

The eighty-second quarterly meeting of this Association was held in the Medical Institute, Hope Street, Liverpool, on Friday, the 27th day of February, 1885. The President-elect in the chair.

There were present: Messrs. Morgan, Elam, Hurndall, Bain, Kenney, and Secretary, Liverpool; Messrs. W. A. Taylor, Locke, and Wolstenholme, Manchester; Wittle, Worsley; Woods, senior, Wigan; and Edwards, Chester.

Letters of excuse for non-attendance were received from the following gentlemen, viz.: Professors Williams, Walley, and Lewis; ex-Professor Pritchard; Messrs. M. Naylor, Wakefield; J. M. Walker, Halifax; T.

Briggs, Bury; W. G. Schofield, Pontefract; H. Barnes, Malpas; J. and A. Lawson and E. Faulkner, Manchester; N. Barron, Sutton; R. Reynolds and W. Swithenbank, Liverpool.

The minutes of the last meeting were read and confirmed.

Mr. BAIN proposed and Mr. WOODS seconded the resolution: "That Mr. R. S. Reynolds, Liverpool, be nominated as a candidate for the Council of the Royal College of Veterinary Surgeons." Carried unanimously.

Mr. WOODS proposed and Mr. BAIN seconded, that the following members form a committee and be empowered to take the necessary measures in order to secure Mr. Reynolds' return, viz., the President, Secretary, and Messrs. Bain and Hurndall.

The Secretary nominated Mr. Locke, Manchester, and Mr. Davis, Bootle, for membership.

Mr. HURNDALL read the following paper on

"*The Management of Dairy Stock, with Special Reference to Economic and Hygienic Principles.*"

Mr. President and Gentlemen,—Allow me, in the first place, to congratulate my friend Mr. Moore upon assuming this evening for the first time the high and honourable position of President of this society; it is, in my opinion, a position which it becomes every member to emulate, and in bestowing this distinction upon our fellow members we are alike doing honour to the individual and the profession; it is to me an inexpressible pleasure to see my friends—and as such I look upon every honourable member of our profession—receive well-deserved recognition at the hands of those in whose power it rests to confer it, and to-night I feel unbounded satisfaction at being allowed to introduce a subject for discussion under the presidency of my friend Mr. Moore.

I believe you will all agree with me that the subject I have selected for consideration is peculiarly appropriate at the present juncture. Agriculturists are beginning to discover that the old and beaten paths upon which they and their forefathers have trodden for centuries are no longer worthy of their notice. Politicians, economists, and scientists are with one voice seeking to enlighten them upon the best measures to be resorted to in order that greater prosperity may attend the efforts of the agriculturist. Great attention has been given to the development of the dairy, and the Premier, than whom probably there is no cleverer financier in this country, has repeatedly of late pointed out to farmers the value of a reformed dairy as the source of more profitable returns for labour and capital. Chemists and other scientific men have been lecturing upon the subject, and all who have thought thereupon, being capable of giving an opinion, concur in advising that it is worthy serious attention and careful thought. In justice to myself, I think it only right to state that long before Mr. Gladstone or any of the other gentlemen whose names have recently been prominent before the public advocating the direction of a closer attention to the opportunities and advantages derivable from the dairy, I, in season and out of season, most persistently sought to induce many of my farming friends—in those days being myself a farmer—to give more earnest heed to the work of butter and cheese making, and the sale of raw milk; but as most, if not all of you, know, the English farmer is at the best a very slow and conservative being, and as a consequence I was looked upon as a sort of aimless enthusiast gone mad on one subject; fifteen years ago and more I entertained much the same views and ideas that I do now, and as year by year rolls away, I find that many thoughtful men are coming to hold opinions close akin to those I, in all sincerity, sought to press upon my then *confreres* in business. Now that it is my privilege and honour to stand shoulder to shoulder with you

in life, gentlemen, as a member of one of the noblest of professions, I feel no less anxious to communicate to those whose interest is really at stake, ideas which my professional training has tended to ripen and mature, and I feel that at this present hour I am—though at best poorly qualified—far better able to give wholesome advice than at any previous period of my life; and this fitness is in the main due to knowledge and information gained and applied in my studies as a veterinary surgeon.

The educated mind of a member of our profession, trained to think and act promptly and with decision, is far more capable of considering new and improved suggestions concerning the management of stock than is that of the ordinary agriculturist; and this may be said without in the slightest depreciating the mental calibre of the farmer; to maintain this reputation, however, it becomes a necessary concomitant that the veterinary surgeon should himself carefully digest the subject before pretending to dispense advice thereupon; and hence, I invite your consideration of the suggestions I have to offer in the hope that something of a practical character and for the benefit of the country at large may be the result of our deliberations.

I have very little doubt that some of my conclusions will be considered far too sanguine, and that you will be disposed to charge me with claiming too much success for the system I advocate; if so, all I ask is, don't give too hasty an opinion, nor let it go forth to the world that a decision, negativing my propositions, was after the short discussion possible in one evening arrived at; the subject, gentlemen, is a wide one, and as such claims a deep and far-seeing inquiry; if we can show to the agriculturists of this country that a better, more remunerative, and health-securing system of management is within the reach of all to adopt, we should have contributed an inestimable benefit to our fellow-countrymen, and we shall have done much to exalt the noble profession in which we are each and all so deeply interested. I shall, in the first place, deal with the economic principles involved in the system of dairy management that I am about to lay before you; in other words, the pounds, shillings, and pence side of the question.

It has been the custom of farmers in the past far too much to look upon the dairy as a sort of amusement, or wholesome occupation for the good lady of the house, whereby she might put on one side a small store of pin-money, and especially is this the case when the farm is neither adjacent to nor within easy reach of a populous commercial centre. This view of the matter is altogether an erroneous one; for with indifferent management only it is very easy to prove that the profits of the dairy are well worth earning, and of all the animals on the farm, probably none is capable of greater improvement than the cow, certainly none repays the trouble more promptly. If farmers, instead of spending fruitless efforts in competing with our American cousins, and with Russia and Australia, in growing wheat, would address themselves to matters that are well within their reach, of which the production of butter and cheese, to say nothing of the raw article, are among the number, they would find great advantage to themselves, and be able to show how much they could benefit their own country.

For the better appreciation of the subject, I must remind you of the systems of management now generally adopted.

First, *Grazing*, or the turning of a given number of cattle into a piece of permanent pasture to pick up their own food. Now, what is the practical result of this course of procedure? Immediately the animals are turned into the pasture, the first thing they do is to wander hither and thither until they have satisfied their faculty of curiosity, but at the expense of spoiling the grass for feeding purposes; they next lie down upon the very article which is furnished for their nutriment, they breathe upon it, defœcate upon it, urinate upon it, and in other ways do the best they can to render useless the

succulent material which has cost money in rental, manure, and labour to bring to perfection, and the amount of waste probably amounts to about 60 per cent. of the produce.

Beyond the loss absolutely incurred in this manner, the deterioration in value of the manure must be taken into account, also the risk of exposure to the animals in this extremely variable climate.

The next system is that of "*Stall feeding*" adopted by the town dairymen; while of course the whole of the food placed before the stock is, under this management, consumed, and a great saving effected, as compared with ordinary grazing, there is great room for hygienic improvement; indeed, the deficiency of anything like system in hygiene among dairies is one of the crying evils of the present day. Town dairies as at present managed are probably the centres from whence infectious diseases are disseminated far and wide, and a duty devolves upon our profession to agitate and agitate this subject until the ear of the public and the local authorities are thoroughly aroused to the seriousness of existing conditions. It is true the voice of the veterinary profession has been repeatedly raised, and solemn warning given on this question already, but it has not received that respect which the urgency of the subject demanded. Let me, however, urge upon you, gentlemen, do not be discouraged by this; the path of duty is plain, let us fulfil it conscientiously; then all moral responsibility is shifted from our shoulders to those of the public at large; but knowing, as we do, what are the sad results affecting the human subject from persistent neglect on the part of local sanitary authorities in dealing with this matter, it becomes us as an united profession to continue from time to time, as opportunity presents itself, to sound the note of warning. The sister profession has not infrequently treated our opinions upon this subject with undisguised scorn and contempt; irritating as such treatment unquestionably is, I do not think we shall serve any useful purpose by retaliating upon the medicals in a similar spirit; where they are not amenable to reason and persist in refusing to acknowledge the deference which is due to those who, by practical observation and experience, are qualified to advise thereupon, it seems to me we have only to observe a dignified silence. With the public, however, the case is different, and if we each and all do our best honestly and conscientiously to make the facts known with reference to this matter as favourable opportunities present themselves, I have a very strong faith that we shall be able to assert ourselves as a profession, and that the people will not fail to recognise which is the true authority to rely upon in matters affecting health where animals are concerned. It is because of the lack of observance in sanitation, the extremely artificial and unnatural conditions under which cows are kept and fed, that I object to stall-feeding as conducted in large centres of population like Liverpool, Manchester, and London.

I will not further occupy your time by explaining my objections to existing systems of management, as these will become quite patent as I point out in detail what I deem the advantages of the "*Soiling*" system, which is that I have advocated for many years, because I believe it is productive of greater profit to the individual and the country; because also it is more conducive to health in cattle and consumers of dairy produce, and will serve as a wholesome check to the spread of infectious diseases among the population of busy centres of industry.

By the term "soiling," is meant the herding and feeding of cattle in a yard or enclosed space, having sheds attached, or better still, the whole roofed over, to protect the stock in unfavourable weather, wherein cut food will be served, instead of depasturing the fields. Such crops as lucerne, the clovers, sainfoin, Italian rye grass, meadow grass, vetches, etc., being grown and depended upon for produce during the spring and summer months. Of

course the selection of the kind of crops must depend upon the character of the soil cultivated; during the autumn and winter months, mangel-wurtzel, both tops and roots, carrots, parsnips, Swede turnips, cabbages, oats, beans, peas, meadow hay, clover hay, sweet oat and barley straw, would form the staple food; and let it be observed that the whole of the foregoing may be raised upon the farm without the necessity of relying upon the various artificial cakes and food offered in the market, none of which can in these days of keen competition be depended on as the pure, unadulterated article, and which under the most favourable circumstances cannot compare in utility with the before mentioned natural articles of consumption.

I now propose to lay before you *seriatim* the advantages of the soiling system, and then to enlarge upon each head in its numerical order.

1st. Increased production of milk.
2nd. Superior quality of milk.
3rd. Better condition of animals as compared with those grazed.
4th. Economy in consumption of food.
5th. Great saving of land.
6th. Waste land, now occupied by fences, materially dispensed with.
7th. Increase in the quantity and improvement in the quality of manure.
8th. Value of land produce increased.
9th. Protection afforded stock against various forms of disease, infectious and non-infectious, and parasitic invasion.

These may be accepted as some of the leading advantages accruing from the regular, systematic, and intelligent management of a herd of cattle—dairy or otherwise—on the "*soiling*" system.

We will now examine the advantages more in detail.

1st. *Increased Production of Milk.*—The advantage of soiling over grazing has been proved to be specially realisable in the case of milch cows; when cows have grass, whether meadow or artificial—the latter word being used to differentiate between ordinary meadow grass and such grasses as clover, etc., etc.—brought to them in given quantities and at stated times, they are saved the labour and exertion of ranging far and wide in search of their food; and as they will under such conditions only take just so much exercise as the calls of nature demand, the wear and tear on the constitution does not exceed what is absolutely necessary in this direction, and the nutriment that would otherwise be expended in oxidation in the tissues goes to ensure an increase in the supply of milk, which increase may fairly be set down at one-third over and above that obtained when the animal is grazed. Cows always search after the sweetest spots in a grass field, and I doubt not walk miles during a day in carrying out this fanciful investigation, at the expense of much valuable time that could otherwise be occupied in quiet rumination and rest; the latter being of first importance for the maintenance of constitutional vigour, especially with free milkers, in whom the secretory process makes considerable demands upon the system; hence it is desirable that no more physical exercise should be taken than the requirements of nature suggest for preserving a healthful condition of body. It is commonly estimated that a cow will yield about 3,000 quarts of milk in a year, but excluding city and town dairies, which are conducted on the stall-feeding system, and taking the ordinary farmer's cow as an illustration, this quantity is far in excess of that usually obtained; admitting, however, for the sake of argument, that 3,000 quarts is a fair average, let us see what the soiling system does. In the case of a Sussex bred animal, the detailed particulars concerning which are now lying before me, I observe that for one season, dating from the day the cow calved onwards for a period of fifty-one weeks and four days, the accounts, which were kept with scrupulous accuracy, show that she produced 5,782 quarts of milk, or an average of rather more

than sixteen quarts per diem. It may be urged that this is an extreme case, and that it is not right to quote it as an example of what may always be looked for. I am quite ready to admit that it would not be reasonable to take this as an average case; but let us return to the accounts of the same dairyman, and we shall find the results of eight years' working; the total quantity of milk obtained from one animal during this period under the same management was 38,885 quarts, which is equal to about 4,860 quarts a year, or between thirteen and fourteen quarts per diem all through the year. Of course, much depends on the selection of the animals; but at a meeting of this description it would be a work of supererogation on my part to occupy your time with a description of the peculiar points in a cow that are presumed to indicate her capacity for free milking. I am of course assuming that those who pretend to be dairymen will only keep such cows as promise to give the most profitable yield. I think it necessary just to refer to this in passing, because my arguments are based upon a system of management, and I am assuming that the animals to be dealt with are of a description suitable for the comparison.

2nd. *The Superior Quality of the Milk.*—It will be quite apparent to every thinking man, that if the strength of a cow is nursed by careful attention in providing her necessary food without the expense of uncalled for effort on her part, and her constitution has not to withstand the deteriorating influence of exposure to all sorts of inclement and changeable weather, the nutriment which would otherwise be withdrawn from the circulating fluid for the nourishment of worn-out tissue would naturally be diverted into the channel that made the next greatest demand, which in the cow is undoubtedly the mammary gland. Where, however, physical wear and tear is reduced to a minimum, and is not more, as has already been said, than is absolutely necessary for the maintenance of a healthy body, then the elements requisite for an abundant and rich lacteal secretion abound in the blood, and the physiological process goes on under the most favourable conditions. To descend from the region of argument to realised fact, let us see how the quality of the milk of the cows before mentioned turned out. The milk which was drawn from the cow yielding 5,782 quarts during the year, was of such first-class quality that it produced no less than 675 lbs. of butter, or a weekly average of rather over 13 lbs., which fact, you will admit, speaks volumes for the richness of the milk. The 38,885 quarts, which you will remember were the yield of one animal during eight years, produced 4,299 lbs., giving an annual average of 537 lbs., or a little more than 10 lbs. a week all the year round. Supposing that this yield of 4,860 quarts of milk per annum—which I contend is a fair average to expect, if you select your animals wisely—were sent into town and sold at the usual price of fourpence a quart, the returns would amount to £81 sterling; deduct expenses of keeping the cow, including rent and taxes of land, seed, labour of cultivation, and attendants' wages, which at a very liberal estimate may be put down at £30, and you have a net profit of £50 per cow; or if the farmer sells the milk at the usual wholesale price of twopence halfpenny per quart, you may calculate on a net profit of £25 per cow, which, in my judgment, is a handsome sum to make on the capital required for this business.

3rd. *Better Condition of Animals as compared with those Grazed.*—Some may object that dairy cows used for milking and the production of butter and cheese are never expected to be in high condition. There is, however, an answer to this. Dairymen have learned that cows give very little, if any, less milk for being in high condition, so long as they are sufficiently supplied with food containing a suitable quantity of albumenoid constituents, in addition to the fat-forming principles necessary for milk production; so that should any unexpected circumstances occur tending to interfere with a

full and profitable supply of milk, no great loss need be incurred, as the animal is fit at once for the butcher. There can hardly be any necessity to add to what has already been advanced to prove that animals fed upon this system must perforce make more muscle and fat than if they have to rely upon their food supply by grazing.

(To be continued.)

SOUTHERN COUNTIES AND CENTRAL VETERINARY MEDICAL ASSOCIATIONS.

A MEETING of the above associations was held at the First Avenue Hotel, Holborn, on 26th March. Mr. F. W. Wragg, London, presided, and there were present, Messrs. W. A. Edgar, J. B. Martin, R. A. Stock, H. C. Legge, F. Samson, J. D. Barford, R. J. Barton, Wm. Cawthron, J. Woodger, A. Glover, C. F. Hogben, H. W. Caton, A. Broad, Hon. Sec. C.V.M.A., E. A. Hollingham, Hon. Sec. S.C.V.M.A.

The Hon. Sec. reported that he had received letters and telegrams from Messrs. H. L. Simpson, M. M. Rock, F. Farrance, and C. Morgan, regretting their inability to attend in consequence of business.

The members of the S.C.V.M.A. next proceeded to elect officers for the ensuing year.

Mr. HOLLINGHAM, in proposing Mr. Martin as President for the ensuing year, paid a just tribute to his energy and perseverance in promoting the interests of the association, and remarked that it was mainly through him the association was formed. In these remarks Mr. BARFORD thoroughly concurred. The proposition was seconded by Mr. STOCK, and carried unanimously.

The next business was to elect Vice-Presidents, Messrs. Martin, Stock, Glover, and Barton, having served that office last year. Messrs. Wragg, Cawthron, Barford, and Edgar were unanimously elected for the ensuing year.

Mr. Barton was elected Treasurer.

Mr. Hollingham was re-elected Secretary.

The PRESIDENT said it had been proposed by the C.V.M.A. to support Messrs. E. C. Dray and Hunting as members of the council.

Mr. HANCOCK thought Mr. Dray would be elected a Vice-President, and proposed that Mr. Barford, of Southampton, should be supported, with Mr. Hunting. This was seconded by Mr. BARTON, and carried unanimously.

The HON. SEC. then read a letter from the Hon Sec. of the R.C.V.M.A. asking the support of the association in taking steps to have clause 9 of the supplementary charter, granted in 1876, rescinded.

Mr. BARFORD said there were many strong arguments against this clause being carried out; there were about 3,000 members in the profession and 130 Fellows, and he thought it was neither fair or desirable, in the interests of the profession, that all Councilmen and Examiners should be selected from so small a section, as there were many good men who were not Fellows who would thereby be excluded. He therefore proposed that the support of this association be given to the matter contained in Mr. Kidd's letter from the R.C.V.M.A.

Mr. HANCOCK rose to second this proposition, and remarked that they were well aware how the original Fellows were elected, and that any well-read man without much practical knowledge could, if he had the spare time, become a Fellow ; such a man would not have the best preparation for an Examiner.

Mr. EDGAR said that this matter had been before the profession nine years, and there had been plenty of time for those who desired it to qualify them-

selves, and he thought it a pity that, just as the clause was coming into operation, they should bestir themselves in order to abolish it. What was the Fellowship degree for, if not to stimulate young men to work and obtain it, and if it carried no other reward than the letter F instead of M, would it be worth working for? He would therefore propose, as an amendment, that clause 9 be allowed to stand.

The PRESIDENT spoke as a member and not a Fellow, and said that when members found that they could not become Councilmen or Examiners without becoming Fellows, it would stir them up to obtain the degree. He finished by expressing his determination to qualify as a Fellow, if necessary.

On the question being put, the proposed amendment was lost by six votes to five.

Mr. W. A. EDGAR then read a most interesting and scientific paper on "Mammitis Bovis," which will be shortly published.

The discussion which followed was taken part in by Messrs. Martin, Cawthron, Barford, Hollingham, Samson, and the President.

A hearty vote of thanks was accorded Mr. Edgar for the very able manner in which he had treated and defended the subject.

A vote of thanks was awarded the President for the very satisfactory manner in which he had fulfilled his duties during the past year, the same to be recorded in the minutes.

Mr. WRAGG having suitably responded, proposed a vote of thanks to their Secretary; this was carried unanimously.

It was decided to hold the next meeting at Rochester, the last Thursday in June.

Red Hill. E. A. HOLLINGHAM, *Hon. Sec.*

THE WEST OF SCOTLAND VETERINARY MEDICAL ASSOCIATION.

A MEETING was held in the Veterinary College, Glasgow, on the 18th March. The Vice-President, Mr. Anderson, jun., occupied the chair.

Present:—Professors McCall and Lewis; Messrs. Robinson, sen. and jun., and Macfarlane, Greenock; Mr. Allan, Clarkston; Weir, Airdrie; McCall, Ayr; Calderwood, Clitherow; Messrs. Weir, McQueen, Wyper, Tweedley, Frew, McNicol, and the Secretary, Glasgow.

Apologies for absence were intimated from Professor Walley and Mr. Rutherford, Edinburgh; Mr. Campbell, Kirkcudbright; Mr. Constable, Inchture; and Mr. Nesbit, Galston.

After some preliminary business concerning the ensuing election of members to Council, the National Veterinary Association, and the Fellowship Clause,

The CHAIRMAN called upon Mr. Robinson, jun., Greenock, to make some "Observations on the Epizoötics of the Horse in 1883-4, and their Modes of Propagation"; and afterwards on Mr. Weir, Glasgow, to show a specimen and read notes of a case of Acute Arthritis.

Mr. ROBINSON said: During the last two seasons I had the opportunity of observing the dissemination of a contagious disease, one mode of the transmission of which I thought had hitherto escaped observation. While endeavouring to collect sufficient information on the subject, to bring the matter before the society in a conclusive manner, there appeared in the *Recueil de Médecine Vétérinaire* of August last year, the report of a commission deputed to give the Société Centrale an account of a memoir by M. Deglaire on, apparently, the same disease, propagated in precisely the same way.

As our French friends were first in the field, and particularly as their ob-

servations are more minute, I will take the liberty of translating to you what appeared in the journal above mentioned :—

"REPORT OF COMMISSION ON TYPHOID FEVER (?)* OF THE HORSE, MODE OF PROPAGATION, ETC.

"M. TRASBOT : Gentlemen,—In the year 1882, M. Deglaire, veterinary surgeon, at Sedan, addressed a memoir to us relating to an epizoötic which had attacked the equine species in the department of Ardennes. A commission of MM. Nocard, Benjamin, and Trasbot was charged to give you an account of this memoir.

"Since then the author has addressed two complementary notes to us, confirmative of his first work, and a plan of the country invaded by the epizoötic.

"The whole forms a considerable amount of original document. I have now the honour of bringing before you the principal points. This affection, which appears already several times to have attacked the horse population of Ardennes, showed itself suddenly in the month of January, 1882, in a locality close to Sedan, and from there pretty rapidly disseminated itself through the country by a particular mode of transmission, which the author believes to have seized—a mode of transmission which constitutes, as we will see, the original side of his memoir.

"The disease commenced in all the stables in a mare, and then propagated itself, without distinction and with great subtlety, to the horses of the locality. The subjects attacked are under the stroke of an intense fever; there is extreme languor, the great functions are accelerated, the beatings of the heart have a metallic tinkle, the pulse is rapid, the artery soft, the eye weeping, and the conjunctiva cachou coloured. The mouth is dry, burning, and the gums present a violet line; the extremities are ordinarily involved. During the first few days the appetite is absolutely lost, but the excrements do not present any modification. All these symptoms come on rapidly—in twenty-four or forty-eight hours. They diminish sensibly towards the third or fourth day, and disappear the tenth, twelfth, or fifteenth day, according to the case.

"Contrary to what has been observed in the majority of typhoid epizoötics, M. Deglaire has not observed any localisation of the disease; a fatal termination has been a rare exception, and has only been observed in a few sucking foals. No adult horse treated from the commencement has succumbed, but convalescence has generally been of pretty long duration ; and, finally, abortion has been observed in nearly all the mares in foal which were attacked. The disease frequently disappears without any treatment. The author prescribed for the majority of his cases white diet and the tartro-borate of potash, or the sulphate of soda.

"When the languor was excessive, a small blood-letting was generally followed by sensible improvement; but the question of treatment has here relatively little importance. That which is particularly interesting is the march of the epizoötic and its importance from the point of view of rural economy; for although it has caused little mortality amongst adults, it has been the cause of great hindrance to agricultural work.

"Our colleague regrets not being able to indicate the anatomical alterations of the disease which he has studied, the mortality being so small as not to have given him the opportunity of making a single autopsy.

"He now arrives at the etiological question, and remarks that it is not possible to explain the development of the disease by the invocation of the

* The (?) is mine.—A. R.

ordinary causes of Typhoid Fever: youth, plethora, fatigue, want of training, and excessive work.

"It is a unique cause, says the author. It is the effect of contagion by a particular method altogether new, and by that in itself extremely interesting.

"Everywhere the disease seems to have been imported by travelling stallions, even when these appeared to be themselves in the enjoyment of good health.

"In all the affected stables the disease has commenced in one of the mares covered.

"He reports, in his first memoir, twenty-one cases to this effect, clearly proved, collected by himself or his father, exercising the veterinary profession thirty-four years.

"Other cases in great numbers remain unknown, because the proprietors, for one reason or another, have not consulted veterinary surgeons.

"In all cases the disease has commenced in a mare recently covered. A little inquiry has always elicited:—1. That it was the consequence of a contagion easily traced. 2. That it has been brought in by some travelling stallions, and that it has been transmitted by the service of the first mare of the infected stable.

"The history of one of the stallions is particularly curious. The horse was attacked by the disease in September, 1881. He recovered perfectly, and commenced his service in the month of January, 1882, infecting the country until the month of July, by transmitting the disease, which may be affirmed with certainty, for the disease disappeared with his service. Other stallions became infected by serving affected mares, and afterwards transmitted the disease.

"The epizöotic recommenced in 1883, always with the services. This time it is disseminated by another stallion, which has again introduced it in 1884.

"The stallions which transmitted the disease seemed to enjoy excellent health. In two complementary notes, M. Deglaire again reports a considerable number of new cases, to force conviction on those who may still doubt. He asks himself, finally, if he has been in the presence of Typhoid Fever, of Horse-Pox, of the *Maladie-du-coit*, of the Influenza of Zundel, or of a disease not yet described, and concludes, with reason, we think, the existence of the first.

"But still he is astonished that a stallion in a state of perfect health—apparently, at least—has power to transmit the disease.

"On this point, in fact, it would be hazardous to form a definite opinion. It may be thought that the animal serves as a vehicle of contagion, is impregnated and transports it after the manner of inert substances, until an irrefragable explanation of the fact be given us. Must we admit a chronic form of Typhoid Fever? We think not. The author points out the losses which this epizoötic has caused to agriculture. He asks that it may be added to the diseases designated under the article 1 of the law of 21st January, 1881.

"On this point we separate ourselves from him. The disease is not of sufficient gravity to justify the application of sanitary measures much more hampering than useful.

"He proposes the question: if the proprietors of horses contaminated could, by invoking the articles 1382 and the following—notably, 1385—institute against the proprietors of the stallions which have given the disease an action of damages? For that there would require to be proved that the disease had been carried by the suspected stallions and by no other way. Then, that proof would not be easily furnished. The mechanism of accidental contagions is sometimes so difficult to seize that actually it would

be rash to express one's self in court, where it is not sufficient to have an opinion, but where it is necessary to express a certainty. That last question, it seems to us, must be left open.

"To conclude, gentlemen, the work of M. Deglaire possesses qualities you will prize highly. It is composed of precise documents. It makes known a mode of propagation of Typhoid Fever hitherto unknown.

"From this point of view it has an incontestable originality. We now ask you to remit it to the Commission of Rewards, which we hope will judge it as favourably as we have.

"*Discussion.*

"M. CAGNY: The epizoötic observed by M. Deglaire has generally been benign, which is not unusual. I have seen Typhoid Fever exhibit itself with little gravity in certain localities, depending particularly on the season of the year in which it occurred, and more or less upon the good condition of the horses in the locality.

"I now turn to the important part of the communication of our colleague—contagion consequent upon the service of stallions in good health. This is not an isolated case in the history of this disease, as you will see by the following extract from a letter of M. Delamairés, dated July, 1883:—

"'It is true that I had to attend horses attacked by Typhoid Fever, belonging to M. Roblin, at Betz, and to M. Courtier, at Villers-sous-Genest. On the 15th of June, I was called to attend, at M. Courtier's, two mares affected with Typhoid Fever, and which had been served along with other three, not ill, eight days before, by a black stallion belonging to Wallon. Since then seven or eight other horses and one of the above three mares have been affected, all pretty mildly, several exhibiting a temperature of 41 C. and some tenths (about 106 F.).

"'There are still some fifteen horses in the stable which have shown no illness.

"'I separated the affected, and scattered the others. On the 20th, I was called to M. Roblin's, to see a mare served also eight days before by the same stallion. The mare recovered, but communicated the disease to her neighbour in the stable, an old horse, which died. Another mare, not served, has since been ill, but is recovering. Two other mares, separated since, but which had been in contact at the commencement with the affected, are well; they have not been covered. I have seen our colleague, Congis, who informs me that he also has some cases of Typhoid Fever, some of them at Ronville; and I have since learnt from M. Courtier that the stallion in coming to him the first time arrived from Ronville, where he had sojourned.'

"M. Cagny continuing says: Here also is another instance of a much earlier date, observed in 1826, in some districts of the canton of Desures, surrounding Boulogne-sur-Mer, by Bernard, of Boulogne-sur-Mer, who published it in the *Journal de Medecine Veterinaire Theorique et Pratique* in 1830. Typhoid fever broke out in France in a general manner on the whole horse population in 1825. It was at that time described under the name Epizoötic Gastro-enteritis of 1825. Now, in 1826, following the service of certain stallions, the same Gastro-enteritis showed itself, in March, in mares which had not been attacked in 1825, and only upon these, and propagated itself in the stables among the animals which had not been attacked the previous year. The proprietors becoming alarmed, ceased to have their mares served. Then, at the end of May, they recommenced, beginning with the newly recovered mares, in which no return of the disease was observed. When tried with mares which had not yet been affected, either in 1825 or in 1826, the disease reappeared.

(To be continued.)

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE general annual meeting of this association was held on the afternoon of Friday, the 27th ult., at the Great Western Hotel, Reading, and was well attended, among those present being Mr. W. G. Flanagan, President for the year; Mr. G. A. Lepper, Aylesbury; Mr. J. P. S. Walker, Oxford, Treasurer; Mr. Simpson, Maidenhead; Mr. Irving, Chipping Norton; Mr. Simpson, Windsor; Mr. Barford, Southampton; Professor Pritchard, London; Mr. F. W. Wragg, London; Mr. Jas. East, Aylesbury; Mr. Darling, Bracknell; Mr. G. A. Drewe, Abingdon; Mr. Mellett, Henley; Mr. Varney, Winslow, Bucks; Messrs. Hunt and Howard, Newbury; Mr. Slocock, Hounslow; Mr. Williams, Lamborne; and Mr. H. Kidd, Hungerford, Hon. Sec. Apologies were announced from Messrs. H. G. Lepper, J. W. Lepper, Joseph Leach, Brewer, Walker, Jones, Bull, J. P. Bennet, Hanks, etc.

On the proposition of Mr. WALKER, Dr. Fleming was elected an hon. associate of the society; and on the motion of Mr. JAS. SIMPSON, of Maidenhead, and of the PRESIDENT respectively, Mr. Chas. Pack, of Maidenhead, and Mr. C. W. Griffis, of Reading, were unanimously elected members.

Other routine business having been transacted, the meeting unanimously resolved (on the proposition of Mr. JAS. SIMPSON, seconded by Mr. BARFORD) that the next meeting of the association, to be held in July, take place at Maidenhead.

Mr. KIDD next proposed the following resolution, notice of which was given at the last meeting, viz.:—"That it is expedient for the welfare and encouragement of the members of the Royal College of Veterinary Surgeons that they have free and unlimited choice in the selection of members of the profession to serve on the council. The members of this association therefore petition the President and members of council to take the necessary steps to have Clause 9 rescinded of Supplementary Charter, granted by Her Majesty the Queen on the 23rd day of August, 1876." He said his reasons for taking up this matter were, first, to draw the attention of members of the profession to the clause, and, second, that the subject might be discussed so as to draw hearty and unanimous support to those gentlemen who may take it up at the Council Board. At no period were members of the profession, individually, held in so much esteem by their clients and the public generally than the present, and at no period had the profession, as a corporate body, had so many obstructions to encounter and drawbacks to contend with as in the immediate past and the present time, due—to some extent at least—to the action of some of its own members, and from whom the profession has in a special degree a claim for consideration. For example, inspectorships under the Contagious Diseases (Animals) Act naturally should be given to members of the profession and not make them (inspectors) subordinates to policemen. The title of veterinary surgeon should exclusively belong to those who have studied veterinary surgery and medicine, and who hold a diploma. Veterinary surgeons' claims to inspectorships of meat are ignored, whilst they are best qualified to protect the public against the dangers arising from using diseased meat. The profession has to contend with a system of quackery of a *high* class which is being established. And last, but not least, the profession is threatened in the near future to be deprived of the freedom of choice of members to serve on the council. This is a serious matter, and one which will affect us all if carried out. It is against the spirit of the times and will thrust the profession, both Fellows and members, into a position from which it cannot rise for a considerable time. There would be nothing to prevent the first council of Fellows from approaching Her Majesty for another charter to give them the power of self-election, and many other things which would militate against members, and which they would be powerless

to prevent. I have nothing to say against any Fellow. There are some—and I hope many—Fellows desirous to have the obnoxious clause rescinded; there may, however, be some who will do their utmost to retain the clause, as there are always individuals to be found who think of themselves first, themselves last, and themselves only. I do not think that members should be taunted by Fellows that the degree is sour grapes, that "they have not the aspiration, the courage, or the knowledge to attempt it." Because there were gentlemen who refused the proffered honour (hear, hear), and there are those who do not approve of it in principle (hear, hear), and there are many members who are as able to pass the Fellowship examination as any who have passed it, and who, if elected as members of council, would be an honour to the Board and a credit to the profession. Will any one accuse the President of the Royal College of Veterinary Surgeons "of want of courage, or the lack of knowledge to attempt it"? Would it not be humiliating to see him submitting himself for examination? Will the profession be indifferent to their own interests by seeing such as Mr. Simpson thrust out of the council? Surely this would be ingratitude for what he has done for the profession; and if we retain for him a seat at the Council Board I venture to assert that he will continue his interest in all things affecting members. I am one of those who do not approve of the degree in principle, and consider that it would have been to the best interests of the profession had it been made an honorary degree, and conferred on those who had distinguished themselves as ornaments of the profession, without examination and without payment. Is it reasonable to think that 2,600 members should be restricted to select members of council out of a total of 103 Fellows? The degree cannot make them better practitioners, nor can it qualify them for a seat at the Council Board, any more than the diploma can qualify members to be professors. Much might be said on this point, but I have already trespassed on your time, and I would only add that if the members of the Royal College of Veterinary Surgeons would be true to themselves, by speaking out boldly, and with one voice, in defence of their rights, in asking that clause 9 be rescinded, I feel sure they will not appeal to the members of council in vain.

On the suggestion of Professor PRITCHARD, Mr. KIDD amended his resolution by substituting the words, "That it is absolutely necessary," for the words, "That it is expedient."

Mr. WALKER (Oxford) had very great pleasure in seconding the resolution. He had read over the Supplementary Charter therein referred to, and his thought was, "Well, human nature is human nature, and is always selfish." He would not say those Members of the Council who were members in 1876 were the most selfish men in the world, but he did think they were possessed of a fair quantity of that commodity (laughter), because they not only took the liberty of electing themselves, but did it at a cheap rate. They elected themselves by paying a fee of ten guineas for the Fellowship degree, and they asked those who came after them, and who were their juniors—he would not say in knowledge, but in years—to pay a penalty of fifteen guineas. He could not himself see why those individuals should have saddled their successors with the payment of a larger sum. It was said that the degree was intended to promote and encourage the study of veterinary medicine and surgery; but he failed to see how that end could be attained by men electing themselves without passing any examination whatever. The number of Fellows at present upon the list was 103, and out of that number only thirty-seven had taken the degree by examination. But upon referring to the list of Fellows, he found there must have been some irregularity in their election, as three were entered in 1882 without having passed any examination. He did not know how many had been rejected at

the examination. (Professor Pritchard : I think only one.) He (the speaker) was not behind the scenes ; but he found three names appeared in the 1883 list without examination, and he should like to know how that occurred. (Hear, hear.) If the Fellowship degree was to be open, it ought to be open to the whole of the profession, and not to certain individuals. (Hear, hear.) He should like to know also whether those who held that degree were superior to their brother members in the profession because they did hold it. He did not see that such a degree, which a man got for ten guineas, could elevate his status in the profession at all. (Hear, hear.) He should not, however, so much object to the Members of the Council conferring degrees upon themselves ; but he had a most decided objection to their taking into their own hands the ruling, the working, and, in fact, the management, of the Royal College of Veterinary Surgeons entirely. (Hear, hear.) He thought whatever rules were made should be made for the benefit of the profession, and not for individual members, and he said that rules which excluded, say, 2,600 of the members from having any voice at the Council Board must be ruinous to any institution, and must retaliate on the heads of those who framed them. He therefore had the greatest possible pleasure in seconding the resolution, and he felt grateful to Mr. Kidd for having brought it before this meeting. Looking at it altogether, he thought the existence of the present state of affairs a gratuitous insult tothe professon. (Applause.)

Mr. SIMPSON (Maidenhead) thought it possible that some present were not thoroughly acquainted with the wording of the clause referred to by Mr. Kidd, and more particularly of No. 9, which runs : "At the end of ten years from the date hereof (1876) no Member of the said College, save and except the present Members of the said Council, who shall not also be a Fellow of the said College, shall be eligible to be a Member of the Council, or to serve as a Member of the Board of Examiners." That seemed to him to be rather an arbitrary clause. (Hear, hear.) Possibly if the clause had met with favour by the profession, there would have been more members present themselves for examination for the Fellowship degree. As it was, he found, on referring to the list, that irrespective of those gentlemen who had the distinction conferred upon them by reason of what might be termed long service—for they must have been in practice fifteen years prior to the granting of the Charter, and many excellent members there were amongst them, one of whom he was glad to see amongst them that day—only thirty-seven members of the profession had presented themselves for examination for the Fellowship degree. He hoped that what he was going to say with regard to army veterinary surgeons would be properly understood. There were many most excellent men amongst that body ; but there was the fact that eight out of that thirty-seven were army veterinary surgeons. The majority of the army veterinary surgeons—or, at any rate, half—were thus in a position to represent at the Council Board the feelings and wishes of the civilian practitioners ; but many of them were totally unacquainted with the ways and doings of the ordinary practitioner there, just as a civilian practitioner would be incapable of representing to the Veterinary-Surgeon-in-chief to the Army what the requirements of the army were. (Hear, hear.) That, therefore, reduced the number from thirty-seven to twenty-nine. Next, there were Fellows who were not practising in England at all—two being in the United States—and that left them with twenty-seven gentlemen who, as time went on, would be removed in the natural course of events, or would retire. Considering that thirty-seven gentlemen had only presented themselves for examination—at the rate of four per annum—and if they allowed for occurrences which would crop up amongst that number, at the end of the year, when the clause came into operation, they would have only something like twenty-eight men left to

select from as members qualified to sit at the Council Board. Some of that number were, he knew, doing very little practice. They might be very excellent men, but they were not representative practitioners, and some of them were certainly not gentlemen for whom they would vote for the Council. Next year the gentlemen on the Board who, from various reasons, had not gone in for the examinations, would vacate their seats; and they would be called upon to elect the Board from those thirty-eight who had been fortunate enough. They had enjoyed the fun of going in for an examination for the Fellowship degree. He hoped that if the resolution was carried, Mr. Kidd would propose that copies be sent to all the Veterinary Medical Associations in the Kingdom. (Hear, hear.) The great advantage of those associations was seen in such matters, as they gave the members an opportunity of meeting together, and expressing their views, which unquestionably represented the feeling of the profession at large. (Hear, hear.)

Mr. G. A. LEPPER fully endorsed every word that had been said on the subject. He could see clearly, as time went on, the management of veterinary matters would, under the present Charter, fall almost entirely into the hands of army veterinary surgeons. They all knew that after a man got settled down in country practice he had not the time at his disposal to go up for examination for the Fellowship degree. He should be very pleased to render any assistance he could to get the clause expunged. (Applause.)

(To be continued.)

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE meetings of the Montreal Veterinary Medical Association were held on the dates specified below.

The quality of the essays read, and the interest displayed by its members, shows the increasing success of this association, and its value to the students cannot be over-estimated. The library now contains over 380 volumes, not only comprising the latest works on veterinary science, but also the latest works on human medicine and pathology.

The regular fortnightly meeting was held in the College on Thursday evening, December 11th, 1884, the President, Mr. M. C. Baker, V.S., in the chair.

After the usual business, Professor Mills, of McGill University, was unanimously elected a member.

Mr. CLEMENT, V.S., read a communication on the "Removal of a Cystic Tumour from the Neck of a Horse." The operation was performed while the patient was under the influence of chloroform.

Mr. LAMB then read a very interesting paper on "Horse-shoeing," taking up its history, etc., and treating of the preparation of the foot, and application of the different shoes; also how to overcome various defects of conformation and quality of the hoof by proper shoeing.

The paper elicited considerable discussion.

The meeting then adjourned to January 8th, 1885.

The regular fortnightly meeting was held in the College, on Thursday evening, January 8th, 1885, the President, Mr. M. C. Baker, V.S., in the chair.

Mr. SCOTT communicated a case of Purpura Hæmmoragica, on which there was considerable discussion.

Mr. KEYS then read a paper on "Glanders," taking up its history, geographical distribution, pathology, pathological anatomy, symptoms, and contagious nature, etc.

There was considerable discusssion.

The meeting then adjourned to February 5th.

The regular fortnightly meeting of this association was held in the College on February 5th, the President, Mr. M. C. Baker, V.S., in the chair.

Mr. E. W. HOARE communicated a case of Chorea as a sequel of distemper in a dog. The treatment was by the administration of nux-vomica, alternated by Liq. arsenicalis. The case was brought to a successful termination.

Mr. GARLAND then read a paper on "Strangles," describing the regular and irregular forms of the disease, symptoms, causes, and treatment, etc.

A lively discussion followed on the various points.

The meeting then adjourned.

The regular fortnightly meeting of this association was held in the College on February 19th, 1885, the first Vice-president, Mr. Charles McEachran, V.S., in the chair.

A vote of thanks was passed to Mr. F. S. Billings, of Boston, U.S., for his donation to the library of a German work.

Mr. CHARLES MCEACHRAN, V.S., then communicated some cases of lead poisoning in cattle and horses, which came under his notice while on a visit to Perth, Scotland. The poisoning in question was caused by lead ore being left on the pasture fields.

A discussion took place as to the symptoms and the best treatment of lead poisoning.

In these cases, Magnesium sulph. and Ac. sulph., with demulcents, was the treatment adopted.

Mr. SCOTT then read a paper on "Anthrax," taking up its history, symptoms, pathology and contagious nature, prevention, etc. He recommended the strongest preventative measures, such as burning the dead animals, and all they came in contact with.

Considerable discussion followed.

The meeting then adjourned to March 5th.

E. W. HOARE, *Librarian, M.V.C.*

DICK'S ROYAL VETERINARY COLLEGE.

THE presentation of prizes in connection with this College took place in the Council Chambers, Edinburgh, on Saturday, April 11th—Lord Provost Sir George Harrison presiding. At the outset the Lord Provost congratulated the prize-winners, and said he had no doubt they would feel it to be their duty to do honour to the institution in which they had received their education. (Applause.) Principal Walley mentioned that the competitions for the prizes extended over a period of three sessions, and that they were distributed previous to the students going up to the final examination for the diploma. He congratulated Mr. Lloyd on the prominent position he had taken in the competitions. The Lord Provost then presented the prizes, with the exception of the gold medal given by Mr. Harris, depute-clerk, which was handed to the winner by Bailie Clark. The following is a list of the prize-takers :—

Mr. John S. Lloyd, Treflach, Oswestry—Gold medal chemistry (presented by Dr. Aitken); gold medal anatomy (presented by Professor M'Fadyean); gold medal veterinary medicine and surgery (presented by Professor Walley); and the gold medal cattle pathology (presented by Mr. A. Harris). Mr. Whitecross—Gold medal physiology (presented by Dr. James). Highland Society's Silver Medals—Chemistry, Mr. John Barr, Kirkcudbright; physiology, Mr. J. S. Lloyd; materia medica, Mr. J. S. Lloyd; practical pathology, Mr. J. S. Lloyd; botany, Mr. Whitecross; veterinary medicine and surgery, Mr. George Kinnell, Corsock, Dalbeattie; cattle pathology, Mr. George Kinnell; anatomy, Mr. George Kinnell and Mr. Whitecross—

equal. College Silver Medal for Great Merit—Mr. Percival Snaith Darlington. Honourable Mention and Honour Certificates—1, Mr. John Armstrong, Penrith; 2, Mr. Robert Reid, Auchtermuchty. Certificates of Merit—presented by Professor Walley—as Pharmacists and Clinical Assistants—Messrs. Lloyd, Kinnell, Snaith, Reid, Barr, R. E. Thomas, and Armstrong. Silver Medals of the Edinburgh Veterinary Medical Association for the best essay of the session—1, Percival Snaith, Darlington; 2, John A. Hawke; 3, Henry Potts. For the best communication of the session—1, John Barr, Kirkcudbright; 2, George Kinnell. First Class Honour Certificates in Veterinary Medicine and Surgery—Messrs. Lloyd, Kinnell, Snaith, Armstrong, Reid, Rickell, Barr, Gemmell, Meek, and Tyndall. In Cattle Pathology—Messrs Lloyd, Kinnell, Snaith, Armstrong, Reid, Barr, Rickell, Gemmell, and Tyndall. In Practical Pathology—Messrs. Lloyd, Kinnell, Snaith, Armstrong, Barr, and Reid. Educational Certificate of Merit—R. E. Thomas.

Principal Walley, at the close of the distribution, said that the examinations were, like those in other departments of scientific teaching, very strict, and hence he could not congratulate them upon the number of passes They might expect that at the present time there would be a great absorption of veterinary students into the army, and if such were the case his only sorrow would be that he could not accompany them. (Applause.) The Lord Provost also addressed the students, pointing out that they must "scorn delights and live laborious days" if they were to be in the front rank of their profession. Bailie Anderson proposed a vote of thanks to the Highland and Agricultural Society for the medals which they had presented to the college; Bailie Clark proposed a vote of thanks to Mr. Harris for giving a gold medal; and Principal Walley moved a vote of thanks to the Lord Provost for presiding. These motions having been cordially agreed to, the proceedings terminated.

PROCEEDINGS OF THE SECOND GENERAL MEETING OF THE NATIONAL VETERINARY ASSOCIATION.

(Continued from page 53.)

At the annual meeting of the East Kent District of the British Medical Association, held 8th May, 1884, the President, Dr. Robinson, read a communication on an "Outbreak of Epidemic Sore Throat following the Use of Milk from Cows suffering from Aphthous Fever;" and as it is not only the most recent, but the most convincing demonstration of the transmission of Foot-and-mouth Disease by milk supply from cows to human beings, I extract the following:—"During the early days of the month of February, in the present year, a remarkable outbreak of Sore Throat occurred in Dover, which, on account of the suddenness of the outbreak, the severity of the symptoms, and its chief prevalence amongst those occupying the best houses in the town, attracted no small amount of public attention, and naturally provoked a large amount of interest in the investigation as to the cause thereof.

"Controversy on the subject waxed warm, especially when it became known that the course of the epidemic corresponded most intimately with the track of a particular milkman, and that the milk supplied by this man was believed to be the vehicle of the specific poison occasioning the epidemic.

"On the one side were ranged those who had suffered most grievously from the tainted milk, and who, therefore, felt correspondingly indignant upon the subject; whilst on the other side were those who, in the kindness of their hearts, sympathised with the poor milkman, whose trade they feared would be ruined by the disclosure.

"Within the short period of four days 188 persons were attacked by this malady, which, in its leading features, presented a close resemblance throughout the whole series of cases. The symptoms varied, of course, in severity, both at the onset of attack and in the sequelæ that followed; but local inflammation of the throat, accompanied by enlargement of the lymphatic glands of the neck, was the prominent sign met with in the individuals attacked, *vesicular eruptions* preceding and accompanying the inflammation. During the week ending February 9th, 205 persons were attacked, all of whom obtained their milk supply from one particular dairy. The houses in which these people resided were distributed in forty-two different streets in the town, widely separated from each other.

"In nineteen of these streets (or nearly half of the whole number) every house supplied by this milkman was invaded by the epidemic, whilst, with one or two doubtful exceptions, no other cases could be heard of in the same streets—at any rate, none of sufficient gravity to require the services of medical men. Thus the striking fact was exhibited of an exact correspondence between the milk supply and the houses invaded by the epidemic.

"In the remaining twenty-three streets where this milk was delivered, out of eighty-six houses supplied, fifty-one were invaded by the disease.

"The number of persons attacked in each house stricken averaged 2·5 per house.

"In thirty-one houses there was only one case in each, in twenty-one houses two cases in each, in fifteen houses three cases in each, in seven houses four cases in each, in five houses five cases in each, in three houses six cases in each, in one house seven cases, and in another nine.

"In addition to various degrees of susceptibility possessed by different individuals, there were other circumstances which would account for the escape of some of the dairyman's customers while others suffered. In the first place, he delivered special milk obtained from healthy cows, separately from that milk which had been blended with the infected milk; thus at one house an officer and his family had a special supply of milk in a sealed can, obtained from the dairyman's own cows, which were perfectly healthy, whilst the servants had their milk from the mixed milk: the servants suffered, the family escaped!

"There was also a separate supply of what was called 'nursery milk,' for which a higher price was charged, and this also was unblended milk. At houses thus supplied the inmates escaped, unless cream (*all* of which the dairyman obtained from the implicated source) was also purchased and taken, as it often was, with fruit at luncheon or dinner, or in tea.

"A marked feature in the epidemic was the manner in which the servants suffered, and this was accounted for by their admission that they had not only, in many instances, partaken of the infected cream, but were large consumers of the milk also.

"From the almost simultaneous character of the outbreak, especially during the first three days, it was clear that some common cause was at work in the production of a crop of cases so closely resembling each other; and when it was found that the houses in particular streets, distributed over different parts of the town, which were supplied with milk from a particular dairy, were the houses selected by the epidemic visitor, it became apparent that the milk, as in many previous epidemics, was acting as a vehicle of disease.

"My own experience, which extends back to 1872, in connection with the propagation of disease by milk, has chiefly been where outbreaks of Enteric Fever and Scarlet Fever have been diffused through contamination of the milk with the specific poisons of these diseases. I have, however, notes of cases where disease in the human subject has been developed after the drinking of milk from diseased cows, but never to the same extent as in the present epidemic.

"For the purpose of ascertaining what particular taint was present in the milk, which was calculated to occasion this particular epidemic, a searching inquiry was made, and the following facts collected. The implicated dairyman obtained his supply of milk from twelve cows kept on his own premises at Dover, and also from three farm establishments in the country. All three places were visited, and diligent search made for any evidence of disease amongst either the cows, or people living or engaged on the premises.

"At one of these establishments in the country it was found that Aphthous Fever had broken out amongst the stock on January 14th, and that milk from some of the affected cows was delivered to the Dover dairyman, and, after being mixed with other milk, distributed to his customers. Moreover, it was from this infected farm alone that the Dover dairyman obtained the supply of cream furnished to his customers.

"At the beginning of the inquiry it was stoutly denied that any of the milch cows had suffered from disease, and a certificate from a veterinary surgeon and inspector to this effect was obtained and published. Recourse was had to the police, and the truth gradually oozed out, until the facts, as above stated, were established beyond dispute; then the farmer not only admitted the fact of the disease amongst the milch cows, but confessed to the sale of their cream and milk in Dover, not only to the dairyman whose milk was specially implicated, but also to another milkman, on two separate occasions, amongst whose customers a second simultaneous outburst occurred. Thus a second experiment was performed with this tainted milk, amongst another set of individuals, with like results to the first, contributing (if such corroboration was necessary) additional evidence of the presence of poison in the milk supplied from the infected farm. Thus it was clearly established that the sufferers in this epidemic partook of milk which had been secreted by cows suffering from Foot-and-mouth Disease, an epizoötic malady typically characterised by vesicular eruptions and soreness of mouth and feet, but, like human diseases, constantly presenting all manner of variations, from the most simple, and often unrecognised attack, to the malignant form which was noticed in the summer of 1872, in some herds of Iceland cattle which were brought to Leith and Edinburgh in that year. The majority of persons who suffered during the Dover epidemic presented two prominent symptoms in common, viz., inflammatory sore throat and enlargement of the lymphatic glands; but the lesions produced varied considerably in different cases.

"The vesicular eruptions were followed either by a raw, red, œdematous appearance of the mucous membrane, or white patches, and the ulcers which supervened assumed in many instances a chronic character, with thick, puckered edges, and were a long time in healing.

"When the inflammation of the tonsils went on to suppuration, recovery was much slower than after common Quinsy, and the enlarged cervical glands remained tender, red, and swollen long after the throat symptoms had subsided, resembling in this respect the sequelæ of Scarlet Fever. Erysipelas and purulent formations were concomitants also of the epidemic. In some instances the feet of those who suffered were swollen and painful, simulating Rheumatism; and in one case Eczema occurred between the toes of the feet, the affection being accompanied with very fœtid exhalation.

"A fatal termination resulted in the cases of two children, who had very bad throats and mouths, with the extension of the disease, in one case, to the respiratory track, their deaths being, in the opinion of the medical attendant, due to the poisonous effects of the milk. Two persons who laboured under chronic Kidney Disease were respectively attacked with sore throats and died on the same day; other people in the same houses suffering also from the epidemic Sore Throat.

"In one house, three persons were attacked on the 4th February with Sore Throat. One of these was a servant girl, who was sent home, and seen by the hospital surgeon on the 9th, at 12 a.m., and died at 4 p.m. Mr. Wood gives the following history of the case:—

"'F.S., attacked five days previously with sore throat and pains in the limbs, complained on the 8th of great pain in the epigastric region, and dyspnœa. There was a purple-red patch on the left cheek, extending to the nose. At 3 p.m. on the 9th she passed into a state of coma, and died at 4 p.m.'

"Mr. Wood says this was an obscure case, but thinks it possible that it was one of blood-poisoning. Instances of the effects of this tainted milk upon domestic animals were narrated to me, but I can verify only one from personal observation. This was a dog to which a quantity of the milk in an uncooked condition was given to drink. The symptoms which this animal portrayed were a blistered and inflamed condition of the mucous membrane of the lips and mouth, and inflammation of the skin and cellular tissue between the toes of one foot, terminating in suppuration.

"The preceding description contains, I believe, a fairly accurate account of the facts relating to this epidemic.

"In extent and severity the outbreak exceeds, in a marked degree, any previous records of the results which have followed the use of milk from cows suffering from Foot-and-mouth Disease. It is, however, quite possible that many obscure epidemics of throat disease may have been occasioned by a similar cause to the above, although the history may not have been sufficiently clear to have established the fact. Dr. Eade, of Norwich, and many others, have had a strong suspicion that this is the case, and there is no doubt that epidemics of Sore Throat have been more prevalent during and following the increase of Foot-and-mouth Disease in the country.

"The official returns show that 461,000 cases of Foot-and-mouth Disease were returned in 1883, against 37,000 in 1882. The difficulty of obtaining truthful evidence is exemplified in the history of this epidemic. If I had been content with the first statement of the farmer, that his cows had not suffered with the Foot-and-mouth Disease, or with the certificate of the veterinary surgeon to the same effect, the salient point in the history of this epidemic, viz., the existence of disease amongst the milch cows, would still have remained in obscurity. Mr. Power, in concluding a report to the Local Government Board on an outbreak of Sore Throat of a diphtheritic character, at Hendon, last year, due to infected milk, refers to the coincidence of ropy character and infectiveness in the milk, etc., and after saying that the farmer was explicit in stating that none of his cows had been suffering from disease (a statement fortified by the certificate of a veterinary surgeon), concludes his report with this very terse statement upon the evidence respecting the freedom from disease amongst the cows:—

"'Such assurance might be entirely comforting, but for a growing misgiving to the effect that ailments of animals, so trivial as to be disregarded or even unnoticed by people about them, may have larger concern with occurrence of specific disease in the human subject than has heretofore been thought likely.'

"With regard to this Dover epidemic, there appeared to be, not only a special infection in the milk, but a septic poisonous influence exerted on those who drank it.

"In considering a cause for this condition of the milk, it becomes necessary to revert to the source from which it was derived. The diseased cows and stock were kept in low, close sheds surrounding a small yard, which was full of decaying manure, rotting turnips, and the infected excreta, so that the specific poison, after elimination from the animals, would, instead of living structures, have for its pabulum decomposing and putrefactive organic matter,

swarming, doubtless, with the bacteria attending these changes. That milk absorbs with great facility volatile matter is a well-known fact, and on these premises the milk and cream especially would be tainted, first, from the infected cows directly, and secondly, from an atmosphere laden with germs fed on animal and vegetable substances undergoing putrefaction; such milk would possess a peculiarly tainted character, and would therefore be calculated to produce the specially poisonous effects noticed during the epidemic. That the specific organisms of various zymotics may undergo modification according to pabulum and environment, is only in accordance with what is observed throughout the animal and vegetable kingdom. The conviction that Scarlatina poison, after residence in sewers or cesspools, obtains the power of inflicting the various lesions seen in throat affections, particularly those approaching a diphtheritic character, has long forced itself upon the minds of many observers, from the fact that over and over again such manifestations of the disease have occurred in localities visited previously by Scarlatina, when facilities existed for the storage of this fever-poison in some sewage collection, and its subsequent liberation and diffusion therefrom. In an epidemic of Sore Throat, which broke out in the early part of this year, in a village about twenty-five miles from Dover, four recent outbreaks of Foot-and-mouth Disease had occurred, and the chief supply of milk was obtained from one of the farms where this epizoötic had occurred. The yard surrounding the cowsheds, and abutting on the dairy, was piled up with dung and filth, which must have been charged with the poison of the disease, and the milk, therefore, would be liable to absorb the virus. In one of the first houses invaded, the father of the children had been engaged in turning over the infected manure, and many of the children attacked had to pass the manure, which was spread out close to the public road. The eruptions about the lips and the alæ of the nose were very similar to that noticed in persons who had drank milk from aphthous cows; but the appearances in the throat approached nearer the diphtheritic character. There was no evidence of recent importation of either Scarlet Fever or Diphtheria; the only specific poison that appeared to have established a habitat in the locality was that of Foot-and-mouth Disease; and, from the history and characteristics of the epidemic, there was reasonable ground for believing that the source of the poison was derived from cattle, the medium in this case being infected excrement. I have referred to the last-mentioned outbreak here because a record of the facts observed during its investigation may, in connection with the foregoing description of the Dover epidemic, help to elucidate some of the difficult problems involved in the etiology of throat affections."

Pleuro-Pneumonia Epizoötica.

This disease is dependent on a specific organism, and only attacks cattle. In sections of the lungs, and in blood drawn from the living animal, my colleagues and myself have invariably found numerous micrococci. They are distinctly oval, and in the blood occur single as dumb-bells, in colonies, etc. They are well shown by staining with Bismarck brown.

By inoculation or otherwise I have never yet transmitted or seen the disease transmitted to any other class of animals, and by not a few veterinarians it is believed not to be inoculable even in cattle, and certainly *it must be conceded that inoculation does not produce the characteristic lung lesions.* The blood poison or microbe selects the lung tissue for its culture and growth, and is given off in the breath exhaled by the affected creature, and if the inoculation theory be true, it is also fixed in the tissues and juices of the lung. I have fed dogs and other animals on the diseased lungs, and on the flesh, for long periods of time, and observed no bad effects, but the reverse,

and I have therefore been forced to conclude that the carcase of a pleuro animal in the early stage of the disease is not unfit for human food.

A great deal has been written regarding the appearances presented by the flesh of animals which have been slaughtered during the progress of the disease, but I have failed in observing them, and granting that the lung lesions are confined to one side of the chest, and the Inspector is only allowed to examine the one half of the carcase, in the majority of cases he could with no reliable authority say whether the flesh was that of a diseased animal or not, and certainly he could not name the disease.

While I incline to the opinion that the carcase of an animal affected with Pleuro-pneumonia Epizoötica is innocuous, still it does not follow that it is nutritive, and in all stages fit for human food. If the animal is in fair condition at the date of slaughter; if the effused products in the lung or lungs have not undergone softening, or the formation of pus, and the flesh of the carcase, after hanging twenty-four hours, presents a firm appearance, and if the cut across the muscles down to the bone is dry, and the fat pearly and firm, then I consider that carcase fit for human consumption, and such carcases have always been devoted to that purpose in the city of Glasgow, and without complaint.

From the "Centralb. fr. d. Med. Wiss.," No. 9, 1884, we learn that T. Poels and Dr. W. Nolen, in Rotterdam, have ascertained that in Pleuro-pneumonia of cattle, the pulmonary exudations contain micrococci, which, in their morphology and mode of growth in artificial cultures, are identical with the micrococci of human Pneumonia. They also assert that *artificial cultures of the micrococci, derived either from human Pneumonia or from Pleuro-pneumonia of cattle, produce in cattle the typical Pleuro-pneumonia.*

That micrococci are plentifully present in the pulmonary exudations of the human subject or of cattle, is only what might be expected, but that *artificial cultures of human micrococci, when inoculated on cattle, produce the specific contagious Pleuro-pneumonia of cattle,* is so contrary to all my experience that I will not in the meantime accept it as proven.

Anthrax, or Splenic Fever.

This disease is also dependent on a microbe, the "Bacillus anthracis," an organism which was discovered in 1850 by Rayer, and about the same time by Davaine, in the blood of animals that had died of Splenic Fever; but as organisms of various kinds are to be found in the blood of animals which die from disease, no specific importance was attached to it at the time. In 1876, Dr. Koch, a German physician, succeeded in isolating and cultivating the organisms, and in our own country, and about the same time, Dr. Sanderson achieved the same success, and the publication of the experiments performed by them have made us familiar with the life-history of the microbe.

As seen in the blood and tissues, the Bacillus anthracis in its earliest stage of development appears a short protoplasmic rod, in length from one to four times the diameter of a human red blood-corpuscle. The rods vary in length; if watched, they are observed to grow, and, having attained a certain length, to divide. The rod, externally, is formed of a sheath, and its interior is filled with protoplasm. In its early stage the rod appears homogeneous, but in a short time it changes, and presents a granular mass, broken here and there. These little masses ultimately form the spores or seeds. When the seeds are fully formed, the sheath gives way, and the spores are thereby liberated. In the spores or seeds, as distinguished from the rods, the contagion in its most deadly and persistent form apparently exists, and the vitality of the organism is something almost incredible.

If, for example, the blood containing fully-developed "spores" is dried (even although it may be into the condition of a powder or dust), and thereafter wetted and allowed to dry and form again a dust, and even allowed to remain in the midst of putrefying matter, its results on inoculation are positive and deadly. Koch subjected the blood to these tests, and after four years' retention in his possession, on inoculation it was in every case as positive and destructive of life as fresh blood. Another important fact in connection with the life-history of this microbe is this, that it can be cultivated or grown artificially, and not even in connection with a living body. Koch grew it in the aqueous humour of the eye of the ox. In two hours the rods commenced to lengthen, and in four hours they had increased from ten to twenty times in length. A sound animal inoculated with the blood of an affected animal almost immediately thereafter shows symptoms of illness, and rarely lives longer than twenty-four hours. The microbes multiply with such rapidity that the capillaries become filled with them, the blood is robbed of its oxygen, and the circulation stopped.

Dr. Sanderson has also discovered that brewers' grains is a capital field for sowing and cultivating bacilli, the smallest quantity of the organisms introduced to the grains rendering the whole fit to propagate the disease by inoculation. The Bacillus anthracis can also be cultivated in an infusion of hay, and in serum and urine.

Dr. Cameron, M.P., Glasgow, in his able address to the Social Science Congress in 1881, on "Health," speaking of the experiments I have referred to, and their importance in enabling us to understand how zymotic diseases originate and spread, says :—"Dr. Koch's success was of immense scientific importance, for whereas it had before been impossible satisfactorily to observe the development and peculiarities of any of these organisms, or even to prove beyond possibility of cavil that it was they, and not the organic media in which they were found, which, when inoculated on other animals, gave rise to the disease, it now became practicable to remove them from all possible contamination, and to prove that this or that organism was really the cause of this or that malady."

The flesh of an animal affected with this disease is not only unfit for human food, but generally destructive to life in all animals. Veterinary and medical journals teem with instances recording fatal effects from partaking of the flesh. Dogs and cats, licking the blood, die from Malignant Sore Throat. The human subject, partaking of the flesh, or accidentally inoculated —as in dressing the carcase—succumbs to that form of Anthrax termed "Malignant Pustule." The skin and wool, or hairs of an affected sheep, goat, or ox, if saturated with the blood at or immediately after death, may become the vehicle of contamination and death by inhalation of the microbe years after the death of the affected animal.

In support of this opinion I quote the following from Dr. Aitken's standard work on the "Science and Practice of Medicine" :—"The sorting of alpaca and mohair has long been known to be attended with considerable risk to life. Also the sorting of all wools and hairs which are dry, dusty, and more or less filthy from contamination with decomposing animal matter, particularly if 'fallen fleeces' are present, and all kinds of goats' hair, camels' hair, low-class East Indian, Persian, and such-like wools, are injurious to health, (1) from the dust and fine short hairs which arise from them, exciting chronic disease of the lungs ; (2) from the amount and virulence of poison from decomposing animal matter that is liberated, producing a low form of Pneumonia (Septic Pneumonia) ; (3) from a specific blood-poison derived from the fleeces of animals which have died from Anthrax, producing the rapidly fatal disease now known as 'Wool-sorter's Disease.' This disease has prevailed in Bradford and its neighbourhood for more than forty years, and still continues

as severe and frequent as ever it was, overclouding the life of the 'sorter' with a mysterious shadow, and threatening him daily with death. In December, 1879, a case of this disease occurred in Bradford, in which an examination of the blood showed the disease to be Anthrax; and during April and May, 1880, five more cases occurred in the same neighbourhood, four of which were rapidly fatal, *i.e.*, within three or four days a malignant pustule formed in three of these cases. The men had been sorting what is known as 'van mohair.'"

Dr. Vacher, to whom I have already referred, writes :—"There is another animal disease which may certainly be transmitted by specifically infected food, *i.e.*, Anthrax or Splenic Fever. Here, however, the fluid in which the contagium lives being the blood, all the tissues must be regarded as infective—the muscles markedly so. One does not hear of infection by milk because the secretion is commonly checked or entirely arrested, and the course of the disease is rapid and fatal. Still, there is at least one well-authenticated case of this disease being conveyed to a human being who drank the milk of an infected cow. Cases of infection by means of meat taken as food are not frequent, because Anthrax flesh readily decomposes, and has so bad an appearance that it can only rarely be introduced into the market. That this disease is transmissible to man is, unfortunately, too certain, and even those who contend that it is only thus transmissible by inoculation, will admit that food may come into contact with a wound in the mouth and be the inoculating agent."

Bovine Tuberculosis—Perlsucht.

This disease, which is characterised by the formation of little bodies termed tubercles within and on various organs and membranes of the body, has, by the recent discoveries of Koch, been traced to be due to the presence of a special microbe, "Bacillus tuberculosis." *All bodies termed tubercles* do not, however, contain this microbe, and this is a point of grave interest alike to the veterinarian and the general public. Further, a naked-eye examination cannot decide whether the parasite is present or absent, and, moreover, it requires a special staining, and a considerable acquaintance with microscopic detail to be able to detect the organism when present.

Bovine Tuberculosis, like human Tuberculosis—Phthisis Pulmonalis (the Consumption of the general public)—is hereditary and infectious. Inoculations with crushed and softened tubercle have transmitted the disease to a great variety of warm-blooded animals—in truth, it may be said that few animals can resist inoculation. The disease has also been transmitted by ingestion of the flesh and tubercles, and the drinking of the milk of affected cattle. Tappeiner (Virchow's "Archiv," vol. lxxiv., 1878) caused dogs to inhale phthisical sputum, which was sprayed into their cage for a certain time once or twice a day, and for a number of days in succession. As a result he produced Tuberculosis in eleven days.

From the *New York Journal of Comparative Medicine and Surgery*, vol. iv., page 180, I extract the following :—"Dr. E. G. Janeway relates a number of cases of Phthisis ('Archives of Medicine'), illustrating its possible contagiousness. Among others was the case of a phthisical young man who kept a pet dog. He was accustomed to sleep with the dog nestling in his arms. The animal became affected with a cough, and subsequently died. Another dog shared the same fate; a third dog suffered from a cough, but its owner died of Phthisis, and the dog subsequently recovered."

The Bacillus tuberculosis has been found in the breath of human patients with advanced Phthisis (Dr. Arthur Ransome, "Proceedings of Royal Society," London, 1882).

Until lately it was the general opinion that bovine and human Tubercu-

losis were entirely distinct affections, but the concensus of opinion is now, I think, in favour of their being one and the same disease. Seeing, then, that bovine Tuberculosis can be transmitted with certainty to other animals by inhalation, ingestion, and inoculation, and that "tuberculous matter derived from man will produce Pulmonary Phthisis in animals, and this inoculated Phthisis may be transmitted by inoculation to other animals," it is but reasonable to conclude that bovine Tuberculosis may be, and is sometimes, transmitted to the human subject by *eating the flesh and drinking the milk* of tuberculous cattle.

The evidence on this point is, of course, of a limited character, but still, to my mind, sufficiently satisfactory, and for further information I have much pleasure in referring the reader to a report by Hertsen, Fleming, and Lydtin, "On the Influence of Heredity and Contagion on the Propagation of Tuberculosis, and the Prevention of Injurious Effects from Consumption of the Flesh and Milk of Tuberculous Animals," and which was discussed at the International Veterinary Congress held at Brussels in September, 1883.

That Phthisis Pulmonalis in the human subject is a hereditary disease, has for ages been the general opinion—in fact, no other opinion could for a moment be entertained, the sad history of innumerable families bearing but too certain evidence on this point. *That* heredity cannot, however, descend by direct transmission of the specific organism, "Bacillus tuberculosis," from the parent to the offspring, otherwise we are shut up to the conclusion that this specific organism, as a seed, may remain latent in the body for many years before it starts to fructify and grow. A more popular opinion is that the heredity descends from parent to child in a peculiar habit of body or organisation, and that this "pre-tubercular" condition of body, by climatic and other conditions to which it is daily subjected, in a shorter or longer period of time, is reduced to that condition that it falls an easy prey, an inviting field for the growth of this special form of living organism. But, as by inoculation of the Bacillus tuberculosis the body of the soundest animal proves a suitable breeding-place for the organism, it need excite no surprise when this disease appears in a family whose progenitors were known never to have suffered from the affection.

In cattle it is not often that we can clearly trace the propagation of Tuberculosis to heredity as usually understood, and even if we can, I do not entertain the opinion that the disease Tuberculosis is transmitted, but, at the most, the pre tubercular habit, and I also incline to the view that even a pre-tubercular habit of body is not necessary.

Given a herd of cattle free from the pre-tubercular habit or heredity, and these fed, housed, and attended as they generally are on a well-conducted farm in the country, and Tuberculosis will be unknown; but remove the same herd into a large city, keep them tied up in warm byres, feed them on brewers' grains, etc., and Tuberculosis will, without fail, make its appearance. Bad hygienic conditions will also, in the country, lay the foundation for the propagation of Tuberculosis.

Since the last meeting of Congress (when we had the pleasure of discussing Mr. Cox's valuable paper on "Human and Bovine Tuberculosis") I have had an opportunity of witnessing and studying the ravages produced by Tuberculosis in a herd of Ayrshire cattle, which, I think, goes far to prove that hygienic conditions have more to do in the propagation of Tuberculosis than is generally believed.

The farm in question is situated in an upland district in the county of Ayr. It has been in the occupancy of the farmer for a long period of time, and on it there has always been a herd of Ayrshire milch cows, young cattle, and sheep. A number of years ago, some ironstone and shale pits were opened in the neighbourhood, and through a part of the farm and past the

farm buildings the water pumped from these pits had to flow. Shortly after the workings commenced, it was observed that the milch cows and young stock had contracted a cough, and now and again there was a death. At all times *some* animals were ailing, and the stock never looked well. As time went on, the bulk of the herd became changed by death, sales, and new purchases—still the disease continued. The farmer was certain that the disease was connected with the water supply, and a filtering tank was erected; but, notwithstanding, the disease continued. An action was raised by the farmer, with the sanction of the landlord, against the shale-pit proprietors, and I was requested to inspect the cattle and advise.

I accordingly paid a visit to the farm, and a more pitiful sight I never witnessed. Several members of the herd, young and old, were at death's door, and reduced to skeletons, and, indeed, there was, to outward appearance, scarcely a sound animal present. I had two of the cattle killed—one far advanced in disease, and the other only slightly. Before killing the animals my colleague, Dr. Limont, Professor of Physiology and Morbid Anatomy, examined the blood microscopically, but we both failed in detecting a specific organism.

The *post-mortem* in both cases displayed general Tuberculosis—far advanced in the first animal, and rapidly progressing in the second.

After suitable preparation, the tubercular deposits in both animals were examined, and the bacilli of Tuberculosis were found plentifully present. On my recommendation law proceedings were stayed, compensation was granted, the herd slaughtered, and it was arranged to conduct the water in pipes underground. The farmer has put on a fresh stock, and as yet all goes well.

The flesh and the milk of an animal affected with Tuberculosis is, in my opinion, in all stages, unfit for human consumption, and, acting on my opinion, I have for more than twenty years condemned every carcase which has passed under my control.

Swine Plague—Pig Typhoid.

This disease, which annually destroys a large number of pigs in this country, and may be described as a veritable plague in America and France, is also, apparently, dependent on a specific organism.

Dr. Klein, of London, in 1878, announced that he had discovered in the diseased organs a form of bacterium in morphological respects identical with Bacillus subtilis, and that artificial cultures of these bacilli produced on inoculation the disease in pigs, mice, and rabbits.

Pasteur has also announced the discovery of a microbe, but it differs from that described by Klein, being a dumb-bell micrococcus and not a bacillus, and Pasteur alleges that Klein's bacillus has no relation to the etiology of this disease.

During the past week (28th June, 1884) we have had an alarming outbreak of Pig Typhoid in Glasgow. On a space of less than an acre upwards of four thousand pigs are congregated, and as the buildings (old wooden cow-sheds) are neither properly drained nor floored, and lie against each other, the malady has spread with great rapidity. The premises are also moving with rats.

Availing ourselves of the opportunity thus afforded of adding to our knowledge of this disease, my colleagues, Professors Limont and Macqueen, and myself have been busily engaged in the microscopic preparation of the various organs, with a view to testing the accuracy, or otherwise, of Klein and Pasteur's discoveries.

Owing to the shortness of time, we have only been able as yet to make a hurried examination of a lung, and the blood. In the scrapings of this

diseased lung, and in the blood, when dried and stained with aniline dyes, after the Weigert-Koch method, we have seen numerous minute *bacilli*. They vary in length, and some are smooth and uniform, while others are beaded with what are usually called "spores." They are evidently true bacilli, and they agree in all points with the description given by Klein. Their minute size, and want of specific reaction (like that of the tubercle bacillus), certainly render their recognition a little difficult at first.

Micrococci can be got from almost any diseased lung or bowel, both being exposed indirectly to the air. Accordingly they were seen in the scrapings of this lung, but there is no special reason for supposing that they are specific.

Allowing the etiology of Pig Typhoid to remain as yet a disputed point, and although I am not aware of any recorded cases of transmission of disease to the human subject by eating the flesh, still, I think that there can be only one opinion entertained as to the unfitness of the flesh of the animals as food for mankind. In the early stages of development of the disease, the symptoms are of an obscure character, and if the carcase has been dressed by a butcher, it is almost certain to pass the inspection to which it is submitted by non-professional Inspectors. When the bowels are produced, the ulcerations of the mucous membrane will greatly assist in the diagnosis, but the bowels are generally kept back, and the carcase alone produced for inspection.

Protective Measures.

Regarding the measures to be adopted for the protection of the public, I have great pleasure in endorsing and recommending those suggested by Professor Walley at our last meeting of Congress.

"The remarks I have to make on sanitary matters apply, in particular, to the supply of milk and flesh-meat to our teeming population, and, consequently, to dairies, slaughter-houses, and dead-meat markets.

"While dairies in towns and cities are compulsorily licensed and registered, no definite rules are laid down in reference to construction, flooring, drainage, ventilation, lighting, cleansing, water-supply, air-space, etc., or such rules are very irregularly applied; and whereas in some cases corporations insist upon proper attention being paid to such matters, in others, occupiers are allowed to keep their cowsheds in any condition they please. In addition to the strict enforcement of sanitary regulations, *every cowshed* in which animals are confined for milking purposes, *should be periodically*—say every three or six months—*inspected by a veterinary surgeon*, and every cow should be examined with the object of detecting the existence of any diathetic affection such as tubercle, or any disease of the udder and uterus; and whenever such disease is detected, power should be given to the Inspector to remove the affected animal to a sanatorium for further observation, or to an abattoir for slaughter. If, in the latter case, it were ultimately found on autopsy that no disease existed of a nature likely to render the milk harmful, compensation should be given to the owner of the cow. The adoption of such a system as this is rendered the more necessary owing to the fact that little reliance can be placed in the statements of dairymen, that the milk (often of considerable quantity) of unhealthy cows is not sold, and the difficulties lying in the way of proving its use are too great to be overcome by ordinary legislation.

"In the matter of meat supply, while certain provisions are made for the inspection of flesh markets, and for the seizure of unwholesome flesh, diseased animals may be exposed for sale without let or hindrance. Sheep in an advanced stage of Rot, Louping Ill, or Sturdy; cattle in the last stage of Tuberculosis, Rot, and other diseases, are exposed for sale in open

markets by hundreds every year, and Inspectors have no power to prohibit such sales, or to seize animals when so exposed. Is this right? I am most certainly of opinion that *any animal exposed in an open market or sale-yard, which gives evidence of the existence in its system of important organic disease, should be seized or removed to an abattoir for slaughter; and according to the conditions revealed on autopsy, the carcase destroyed, or passed for human food.*

"In order further to prevent the unrestricted sale of diseased animals, *all private slaughter-houses should be abolished*, as the great majority of such animals are bought by low butchers, and removed quietly to some out-of-the-way place, or to a private slaughter-house, and there slaughtered, the carcases subsequently being conveyed surreptitiously to some sausage or prepared meat manufactory for use in the preparation of polonies, etc.

"Not only should great precautions be taken in reference to the inspection of meat at abattoirs, *very stringent measures should also be enforced in reference to horse-slaughtering establishments*, as I am quite sure that many of the products of slaughtered horses are used in the preparation of human food, more especially blood and intestines, in the manufacture of black puddings. Were these materials always obtained from healthy horses, the matter would not be of so much consequence.

In reference to *the system of inspection of meat at present in use, I am of opinion that it should be placed on a more satisfactory basis, and in order to do this, definite conclusions should be arrived at by a committee of scientific men, competent to deal with the matter, as to what constitutes unwholesome and unsaleable meat.*

"The conflict of opinion on this subject so often witnessed between professional men—doctors being pitted against veterinary surgeons, and not infrequently butchers against both—is very lamentable, and for the good of the public should not be allowed to exist.

"The great questions requiring to be settled are: What conditions are to be taken as evidence of unwholesome flesh? Is mere flaccidity, discoloration, decoloration, friability, or abnormal moisture, to be held as sufficient to warrant the condemnation of a carcase when no evidence exists as to the presence of disease in any of the internal organs?

"*In all cases, where it is possible to do so, the viscera of animals slaughtered under suspicious circumstances should be retained until the Inspector has had an opportunity of examining them*, and if any doubts exist in his mind as to the nature of any disease that may be presented, and its effects upon the nutrition of the flesh, he should be empowered to consult a veterinary surgeon, whose opinion might be further supported by the Medical Officer of Health, and from the decision of such experts there should be no appeal allowed.

"*Meat Inspectors, as a rule, receive no special training for their office.* They know nothing of the influence of disease upon the nutrition of muscle; they are utterly ignorant of the use of the microscope, and may be held as being quite innocent of a knowledge of even the elements of histology. *Not only should Inspectors be properly trained for their duties, but they should be submitted to a searching examination* before they are placed in the important position of guardians of the public health."

Professor WALLEY, in opening the discussion, said: The subject which I have the honour to commence the discussion of at this meeting, is one, I need scarcely say, of the highest possible importance, not only to the veterinary surgeon, but to the whole human race. You will remember that in the paper I read at the last meeting of this Association, I brought this subject under your notice. The first question to settle is—Should not this subject of

diseased meat be taken up conjointly by the veterinary and human surgeon? I think that the sister profession has not treated us as they ought to have done. Some of its members have even pooh-poohed our ideas and not hesitated to abuse veterinary surgeons in the witness-box. If there is one man more than another who is capable of giving an opinion on this subject, I maintain that it is the veterinary surgeon. He is intimately acquainted with the various conditions of animals, from their birth to their death. He knows what influences affect their fibres and tissues, while the medical man is practically unacquainted with their conditions of health or disease. I must, however, state that there are many medical men to whom these remarks do not apply; who take a deep interest in our profession, who are quite ready to hold out to us the hand of fellowship; and who know as much as we do about this question. It is the natural province of the medical profession to protect their clients against the effects of diseased meat, and if they would join us more heartily than they do a large amount of good would result. I wish to remark here that it was only a week or so ago when I had this paper put into my hands, and since then, I have hardly had time to look at it, owing to the extent of my engagements. However, I will endeavour to point out the most important points which require discussion. In the first place Professor McCall touches upon "*Trichina*" disease in man. There can be no more important subject than this in the matter of food supply. We in this country do not meet with this affection to a very large extent, but we know that it does exist; while it has been shown by Mr. Billings that American pork is largely infested with these parasites. I would throw out a suggestion here that at least two or three samples of pork in every consignment should be examined. With reference to "*Cysticercus cellulosus*," I, perhaps more than any man in this room, have reason to be acquainted with these hydatid diseases. As to Cysticercus cellulosus, it exists more than is usually believed, both in this country and abroad. On one occasion, when I was staying with Mr. Wood, we paid a visit to a farm, where our attention was called to a sheep suffering from Sturdy. We remained to luncheon and a nice-looking ham was placed before us. When asked to partake of it, I said, "No thank you," because I noticed it was a case of Measles. I intended to have brought a specimen, but quite forgot it. The farmer thought that his dogs had tape-worms, and no doubt some one else about the place had tape-worms also. There is no doubt that in every case where pigs are killed the flesh should be carefully examined. If pork is properly cooked no harm can result. But, I may ask, is pork properly cooked, as a rule? I think that the remark of Professor McCall to the effect that the flesh, unless boiled or cooked to destruction, ought not to be given to a dog, requires a little further explanation. Another form of hydatid disease, and which is on the increase, I am deeply interested in, is "*Echinococcus*." The medical men up to within the last few years knew very little of hydatid diseases. They make some strange remarks about this affection and its origin. One gave it as his opinion that the disease had been contracted by drinking water contaminated by a pig-sty. My own opinion is, that this disease is *caused by eating raw vegetables*. It has been said to be obtained from the dog. But we have nothing to do with the dog, unless the absurd practice of ladies' kissing their dogs may give rise to hydatid disease. In this country, we know very little of "*Beef Measles*," which is frequently met with in India. In some districts, immense quantities of sewage grass are used for dairy and fat cattle, but it is a remarkable fact that there is not, so far as I know, a single case of hydatid disease in cattle on such farms. Passing to the question of "*Rinderpest*," I suppose that every man in this room will agree with Professor McCall that, in the early stages of this complaint, the flesh is harmless. Upon the question of "*Foot-and mouth Disease*" I have something more to say. The subject of the contamination

of milk is a most important one, inasmuch as milk is one of the most effective carriers of disease germs. It absorbs them readily ; is very retentive ; and is a wonderfully fertile soil for developing them. I have very good cause to dread their effects, for during the first week I was in Edinburgh, I had three children poisoned in this way, and lost one of them. At the same time, I think that medical men very often overstep the point with regard to milk being the propagator of disease, and if we listened to them we should drink no milk at all. In the remarks quoted in Professor McCall's paper, there are censures passed by medical men upon veterinary surgeons, which I must notice. I put it to you : would any dairyman in his senses—as a rule—mix with his supply of milk for sale, a small quantity, which would contaminate the whole, give to it an unpleasant taste, and damn his business for ever in that district? Does a cow suffering from a virulent disease usually give milk in any quantity? they give a species of milk, but it is not good milk. In the paper before us the words occur : "Such assurance might be entirely comforting, but for a growing misgiving to the effect that ailments of animals so trivial as to be disregarded, or even unnoticed by people about them, may have larger concern with occurrence of specific disease in the human subject than has heretofore been thought likely." But if a cow is suffering from any severe disease, does not the attendant notice it? Then again : does the contamination always come from within? In very many cases it does not. It has nothing to do with the cow at all ; although she and the veterinary surgeon get the blame for something which they have not the power to prevent. "*Diphtheria*" is also said to be conveyed from the cow to man. Medical men tell us something that we did not know ourselves, viz., that cows suffer from Diphtheria of the udder. I have never seen a case, although I have examined as many udders as most men. Diphtheria is not common in the cow. It seems to me that medical men assume that every attack of an aphthous nature is due to foot-and-mouth contamination. The other day a medical officer of health received from a medical man a report of a case of Endemic Aphtha, which he said had been caused by the milk from a dairy in Edinburgh county. Professor Williams, as the inspector, made an examination, and found no trace of Foot-and-mouth Disease. In the quotations in Professor McCall's paper, one man remarks that the veterinary surgeon hid the fact of the Foot-and-mouth Disease. I must point out that medical men are not always as good as they ought to be, and before such remarks appear in print, they ought to be well authenticated. I hold that in Foot-and-mouth Disease no harm can ensue from the milk if there are no udder lesions. If there are vesicles upon the mucous membrane of the udder and teats, you then have contaminated milk, but not otherwise. Where you have young animals dying suddenly from taking the milk of an animal affected with Foot-and-mouth Disease, you will find, on a *post-mortem* examination, intense hyperæmia of the fourth stomach. There are some remarkable cases which have come under the notice of medical men. Ask yourselves how many cases of ordinary Foot-and-mouth Disease occur which pass through all its stages, without producing any harm. Take the case at Market Drayton, where a man was supposed to have been inoculated by an animal. I do not believe that this animal had Foot-and-mouth Disease, but that it was suffering from Septicæmia, and that this man had received matter charged with septic materials. I hold that this is the case in the great majority of cases. I have only seen infective ulceration of the mouth once or twice in calves taking the milk from their mother. Another wonderful quotation is given at page 24 of the Paper as to turning manure over. Does any man among you believe that this will give rise to a disease of this kind? I think that if they had looked a little further they would have discovered that some putrefactive matter—some dead animal—was buried under that manure. I

say that the *real cause* of the outbreak has been entirely overlooked. As to the flesh, I believe that where it shows no evidence of mal-nutrition, or a depraved condition of the blood, it is not harmful. If the animal has suffered from Septicæmia for some days and the flesh is altered in its nutrition, then no man should pass it. If we were to condemn all the flesh and milk where Foot-and-mouth Disease exists, we should waste vast quantities of food. I go a little further than Professor McCall, who condemns the head, the tongue, feet, udder, and the heart, etc. I have examined the tongue, not only directly after death, but hours afterwards, and in all ordinary cases where the tongue is only slightly affected, it sets as well as any part of the carcase, and I have always held that it should be used where there is only a slight amount of disease. Even if you condemn the tongue, why condemn the head? If it is to some extent affected, surely the process of boiling will destroy any infection; for this part requires a great deal of cooking. As to "*Bovine Tuberculosis*," the flesh should be condemned wherever it exists, and the same remark applies to "*Swine Fever*" and "*Anthrax*." I will add that in "*Pig-Typhoid*" or Anthrax you should examine every lymphatic gland for evidence of the disease, and cut right done to the bone also. In "*Pyæmia*" and "*Glanders*," the flesh should also be condemned. In *Foot-and-mouth Disease*, if the flesh is firm, has no bad odour, and no effusion, it is a shame to waste it. In conclusion, I would remark that if any good is to follow these discussions we should arrive at some practical conclusions. We should pass propositions and bring them before the notice of the proper authorities. We should let our opinions be known as to what we consider to be unwholesome flesh. I will ask you to consider the points which Professor McCall has brought to our notice in connection with the paper before us.

The PRESIDENT: I am sure that you have all listened, as I have, with very great pleasure to the remarks of Professor Walley. The subject is a very important one, and I ask each of you to kindly give it your earnest attention.

Professor WILLIAMS: I shall be very brief indeed, and speak more to stimulate discussion than with the idea of enunciating anything fresh. Professor Walley tells you that if you boil the tongue of an animal which has suffered from Foot-and-mouth Disease, you destroy the virus; but that in Glanders or Tuberculosis no amount of boiling will render the flesh innocuous. I maintain that boiling would produce the same effect in one case, as in the other. My own opinion is, that the idea of eating any part of the body which is really affected is repugnant to human nature, and that it should not be offered as food. Then, again, he says that if the flesh be firm it is an indication that it is fit to be eaten. But when a hare is coursed, the flesh is eaten, although it is black. As to odour, you must bear in mind that some game is not considered in condition until it is "high." The people in some parts of Scotland eat with much relish the flesh of an animal which has died from a disease called "Braxy," although it is quite black. I think it is most important to impress upon the public the necessity for cooking meat thoroughly, and for boiling milk; any existing organisms are thus destroyed. The same process might be carried out with water; in which way we might, perhaps, prevent the spread of Cholera, should it visit our land.

Dr. FLEMING: The immense importance of this subject was shown by its having been brought before this Association at its last meeting, and from the fact that medical men are giving it their earnest consideration. Professor McCall has done as much justice to it as the length of the paper will allow. I have no desire to occupy the time of the meeting by entering upon the points which have been dealt with by Professor McCall. My views are already before the veterinary profession, as to the necessity for its entering

more fully into the discussion of the question. This is a question not so much for the medical profession as for our own. In those countries on the Continent which are the most advanced in State medicine, veterinary surgeons are regarded as specialists on these subjects. None of these countries have taken such a long time as our own to recognise the fact that the health and wealth of the people largely depend upon the healthy state of the milk and flesh which are consumed. This is a fact which should, I think, obtain more recognition from our Government. It is evident that the veterinary profession cannot force its views upon the country, until the Government and the public recognise the fact that the health of the community largely depends upon its food and milk; although we hope that repeated attacks upon the apathy of the public may arouse attention at last. With regard to the inspection of live animals destined for food, I may state that in all Continental cities this is carried out by the veterinary profession. In Berlin there are about 144 inspectors of meat in the abattoirs alone, and the inspection is extended to the tissues of the animals intended for food; and this is especially the case with pork. In this country we have nothing of the kind; although I have done my best for the establishment of public abattoirs, the condition of the London slaughter-houses is a disgrace to civilisation. I have had the painful task of examining a large number of them, and can state that anything more disgusting than their condition and management can scarcely be conceived. Granted that, in the case of a large number of diseases, thorough cooking will destroy any disease-germs which the flesh may contain; still, the knowledge of this fact avails little to persons who have a difficulty in finding means to purchase fuel. Even an accomplished *chef* cannot always cook an infected joint so that we may be certain the virus has been destroyed. It is not for the public to protect themselves by cooking; the Government must do that by thorough inspection. No flesh should be allowed in the butchers' stalls that cannot be safely used. As it is now, the knackers will tell you that very few cows are sent to their yards. A cow dies of Septicæmia: the carcase is seldom buried, but is, on the contrary, dressed and sent to some big town. This is not as it should be. We all agree that every slaughter-house should be open to inspection; but I go further, and say that every dairy in the country should be under the inspection of a skilled veterinary surgeon. There can be no doubt that milk is a great carrier of disease, a great absorbent of animal matter. The question under discussion becomes the more important from the fact that the malady, *Tuberculosis*, is becoming more prevalent. At the present moment we have no guarantee that the public are adequately protected.

Mr. EDGAR: This is a subject in which I take the deepest interest, and with regard to which I think that we are called upon to pass a vote at this meeting. We are advocating our claims as inspectors of meat and milk, but there is a powerful agency at work which is endeavouring to prevent us from attaining this position, and which is trying to show that the control of milk-shops should be vested in medical and sanitary authorities, and not with veterinary surgeons. I quote the following from a medical journal:—"The Petition of the Council of the National Association for the Promotion of Social Science, which has been presented to Parliament, to the Privy Council, and to the Local Government Board, contains some very urgent reasons why the control of dairies should be vested in the Local Sanitary Authorities, and not in the Veterinary Authorities, as heretofore. The petition shows that, with few exceptions, the latter possess no sanitary organisation or machinery whatever for the inspection of such places; that the Orders in Council framed under the Contagious Diseases (Animals) Act of 1878 have remained, to a large extent, a dead letter." The Act as carried out now is a disgrace to the sanitary authorities and the veterinary profession, as far as

we are connected with it. I hold the appointment of inspector to a considerable district in the south of England. We are under the supervision of the police. In the event of an outbreak I am called upon to certify that a disease of a contagious nature does or does not exist, and there my duties end. I wish specially to bring one case before your notice. I certified that one animal in a dairy was affected with Foot-and-mouth Disease. The inspector —an ex-policeman—made a report, for three weeks, that only one animal was affected. At the end of that time it died, and I was called upon to examine the rest of the herd, and found that they all had the lesions of Foot-and-mouth Disease. Only one animal had been isolated during these three weeks. The question arises, What was done with the milk of the remainder during that period? This is how the inspection of dairies is carried out. At present we have but little power to combat the disease. There are two conditions under which dairies should be inspected; they are internal and external. I hold that we should claim to inspect dairies periodically, at not too distant intervals. Sanitary officers and policemen are not qualified to appreciate the importance of the conditions they meet with. In the north of England an outbreak of Typhoid Fever was traced to a dairy. It was a registered one, with open gulleys, and had a byre containing putrefactive matter within a few yards of it. All the animals in a dairy should be branded and registered, and a record kept of every one going from that dairy. Dr. Fleming will have a grand opportunity at the Health Exhibition of representing our claims as inspectors. I should like an explanation with regard to the outbreak alluded to by Professor McCall as having occurred on a farm in Ayrshire. From his statement there, we should suppose that the outbreak of Tuberculosis was due to the water supply.

Mr. PETER TAYLOR: I do not intend to say much, because I came here more for the purpose of listening and of acquiring knowledge. I am thankful to Professor McCall for his very valuable paper. He begins his paper well by telling us that there are three things necessary for health—viz., good food, good air, and good water. It is necessary for us to know what constitutes a healthy body. There has been much said about veterinary inspection. We have not hitherto made our influence felt. We must prove by our ability that we are capable of taking a more prominent position. We must never ignore the sister profession, to which we are very much indebted, and it behoves us to hold out the right-hand of fellowship to that profession. I may say that I consider that they are far above us at the present day. There is no doubt that to aid them in the inspection of meat the local authorities ought to have the assistance of really qualified veterinary surgeons. It is a disgrace that at the present time some discarded butcher or policeman is employed to carry out this duty. Veterinary surgeons should also see the animals before they are slaughtered. Experts have left us in a position in which we do not know what we are to rely upon for the analysis of milk, and what basis we are to act upon in deciding whether meat is in a healthy condition or not. If all we hear be true, it would appear that the human race should long ago have become extinct, and that there ought not to be a single animal on the face of the globe. I believe that previous to A.D. 1800 there were fewer epidemics than now. I hope that the young men of our profession will study the microscope, so as to be able to detect these bacilli.

Mr. C. W. ELAM: At a meeting like this, where so many of our ablest men are present, it seems to be a great pity that an uncertain sound should go forth. I was pleased to hear Professor Williams give it as his opinion that we ought not to ignore diseased portions of meat. There ought to be a definite line marked down. Mr. Edgar says that we are here to advocate our position as veterinary inspectors. We are also here to show that we are the proper persons for the public to employ; to show that the knowledge we

possess specially fits us for this important duty. It is a very sad thing, I think, that at present the policeman is the man in authority. I am glad, for this reason, that I have not held an inspectorship. My idea of the average medical man is not very exalted, and in my opinion the average veterinary surgeon is quite his equal. Mr. Taylor says that epidemics are becoming more prevalent. From what I have read, I believe that they are decreasing. There is no doubt that if the medical and veterinary professions went hand in hand, good results would follow.

(To be continued.)

Army Veterinary Department.

Gazette, March 24th.

Veterinary Surgeon, First Class, D. J. Hinge to have the local rank of Inspecting Veterinary Surgeon whilst serving with the Suakin Expeditionary Force. 19th February, 1885.

Gazette, April 10th.

ROYAL HORSE GUARDS.—Veterinary Surgeon, First Class, M. J. Harpley, has been placed on retired pay, with the honorary rank of Inspecting Veterinary Surgeon. January 20th.

Gazette, April 14th.

ROYAL HORSE GUARDS.—Veterinary Surgeon, First Class, Isles Matthews, from the Veterinary Department, to be Veterinary Surgeon, vice M. J. Harpley, retired.

At the Queen's Levée held at Dublin Castle on the 9th of April, the following officers of the Army Veterinary Department were presented to H.R.H. the Prince of Wales :—W. A. Russell, by Lord Clarina; A. C. Webb, by Sir Thos. Steele, K.C.B.; D. C. Pallin, by Lieut.-Col. Harold Malet; R. Moore, by Sir Thos. Steele.

Owing to the heavy demands upon the Department, which have not been so severe since the Crimean War, it has been found necessary to increase the number by six more supernumeraries, who will now be twelve. In the battle which took place at Hasheen, Soudan, on March 22nd, no fewer than 846 camels were killed or missing, in addition to horses and mules. Veterinary Surgeon T. A. Mitchell was among the officers and men reported missing on that day, but fortunately he found his way into camp in the evening. The officers of the Department at Suakin are winning golden opinions for the great energy and skill with which they are performing their most arduous duties in a very trying climate. Alluding to the advance to Tambouk, on April 14th, Reuter's telegram reports :—"In view of the forward movement, all the horses and camels have been inspected by the veterinary officer within the last twenty-four hours, and have been found in a healthy condition. The Veterinary Department is much praised for its efficiency."

Notes and News.

PROTECTIVE INOCULATION FOR YELLOW FEVER.—The *Allgemeine Medicinische Central Zeitung* says that Dr. Domingo Freire, of Rio de Janeiro, the discoverer of the bacillus of Yellow Fever, has met with surprising success in his inoculation experiments. Of nearly 1,000 persons inoculated by him, not one single case was severely attacked, and the very few that suffered had the fever in the mildest form possible.

LOSSES FROM SWINE PLAGUE IN THE UNITED STATES.—A Virginia correspondent of the *Cincinnati Price Current* states that it is estimated that 200,000 or more hogs have died since last autumn in the States of Tennessee, North Carolina, Virginia, West Virginia, Maryland, and Pennsylvania from Cholera. Such a loss in these six States would mean about 3 per cent. of the number of hogs in those States.

JAPANESE PROGRESSIVENESS.—The Japanese are going ahead in every branch of study. One of them, who rejoices in the name of Haru Taka Youkura, recently took the medals offered as rewards for the best essay and for passing the best examination in Veterinary Surgery at the New York College; and now he is going home fully qualified to treat the diseases of horses and other animals in the Mikado's dominions. The paper which announces his success, describes Mr. Youkura's mission as calculated to prove to his countrymen "that a horse, like a man, may survive medical treatment."

ACTION FOR SLANDER.—At the Carlow Spring Assizes, Mr. Slocock, M.R.C.V.S., of Carlow, sued Mr. Widger, a horse-dealer of Waterford, for slander and assault, arising from the examination of a horse which the latter purchased. The jury entered a verdict for the plaintiff—damages £5, with costs.

LITERATURE.—In the volume of the "Encyclopædia Britannica" just published, the article on Rabies has been contributed by Dr. Fleming, Principal Veterinary Surgeon to the Army, who has also undertaken to write the article on Veterinary Science.

Correspondence.

CONTAGIOUS PUSTULAR STOMATITIS AND HORSE-POX.

SIR,—I observe that Professor Walley, in his interesting address on "Special Forms of Stomatitis," delivered before the Lincolnshire Veterinary Medical Society, on January 6th, and which appears in the VETERINARY JOURNAL for March, makes allusion to me, with reference to the contagious pustular disease of the mouth of horses sometimes met with, and which has been looked upon as Horse-pox by very high veterinary authorities on the Continent, chiefly in France—where Bouley was, I believe, the first to describe and class it as a form of Horse-pox. In Germany it has been seen; and it was studied by Ellenberger, then of the Berlin Veterinary School, who, I think, first gave it the designation which Professor Walley now determines it should have. I remember the Professor describing his cases to me while I was in Edinburgh, and from the symptoms mentioned, I believed the

disease was what Bouley designated Horse-pox, in one of its forms, and which I have also named it at different times, and was especially confirmed in doing so from my experience of it in an outbreak which occurred while I was in the Second Life Guards. An account of this outbreak appeared in the VETERINARY JOURNAL at the time it happened.

The Professor concludes that the malady is a purely local disorder, due to local causes, and has, therefore, no relationship to Horse-pox (Equine Variola); that there are no lesions outside the mouth, or extending from the mouth; that he is unable to imagine the possibility of a series of cases of any general, infective, eruptive disorder occurring in which the lesions are entirely localised in one particular site.

Referring to the last remark, it is notorious that certain eruptive fevers have special localities for their characteristic eruption, and that it is rare for this to be met with elsewhere. What better example of this could I afford than is to be found in Cow-pox, whether occurring naturally in the cow, or when inoculated? In the former, it is localised on the mammary gland; and in the latter is confined to the seat of inoculation. Professor Walley says he has seen typical cases of Horse-pox both in England and Scotland; but he, unfortunately, has not described them, and therefore I do not know what he considers typical of that malady. That the disease he brought to the notice of the society was not a purely local one, might be inferred from the pyrexia present (moderate degree of fever, temperature 103°); and though there was no depression, and work could have been performed, yet this is no indication of the absence of a general eruptive fever, as the same condition is remarked in Cow-pox.

Being the first in this country to detect and describe this contagious eruptive disorder of horses, and to designate it by the name already given to it by Bouley, I may state that my own experience of it seemed amply to justify me in bringing it before the profession in England under that designation. Notwithstanding the very large number of young and old horses that had come under my notice for a quarter of a century, no disorder corresponding to this had been seen by me until 1879, though in "Veterinary Sanitary Science and Police," published in 1875, I had devoted a section to Horse-pox, and did not fail to indicate this manifestation of it. I had no difficulty, therefore, in recognising it when meeting with it for the first time. The cases then occurring were under close observation by myself and an excellent Farrier-Major, and the opportunity for studying the disease was made the most of. Whether it was the same malady seen by the Professor, I can only guess; but I found the eruption on the buccal and Schneiderian membrane, on the lips and face, and in one case, in addition to these parts, on the croup. In a cryptorchid horse, on which I had operated some time previously, and the wounds of which had been cleaned with the sponge used for the affected mouths, there was an eruption of pustules on different parts of the body, accompanied by tumefaction of the limbs and rather severe pyrexia. At the same time an officer's charger in a sick-box adjoining, had an acutely-inflamed hind pastern (supposed to have been caused by the head-collar rope), with a somewhat profuse discharge for some days.

In addition to the cases among the horses, my Farrier-Major became infected by inoculation through a sore on one of his fingers, and had to be sent to hospital. The doctors who attended him asserted that the sore on the finger had exactly the same appearance, and pursued the same course, as the ordinary vaccine vesicle, but the general symptoms were more acute.

It will accordingly be seen that I was particularly fortunate, in my first experience of the disease, to have under immediate and direct observation clinical and pathological indications which left no doubt on my own mind as

to its being one of the forms of what has been justly regarded as Equine Variola—an affection which, as I have pointed out in the work just quoted, is not always limited to the extremities, but may in certain cases affect the mucous membrane of the upper air and digestive passages, as well as the skin on the trunk. The vesicles will, of course, submit to abortive treatment, as they will in other eruptions of a similar kind, as in Foot-and-Mouth disease; and their doing so is no proof that the malady is a purely local one. It is by no means so, if the case of the Farrier-Major were only considered. The disease I had to deal with was certainly not the ecthymatous contagious disease of horses with which we have been familiar for some years.

March. G. FLEMING.

A REVIEW REVIEWED.

SIR,—In the April number of your journal you do me the honour of reviewing my work on the anatomy of the horse. An accurate habit of statement is no less desirable in a reviewer than in an author, and I hope I shall not be deemed ungrateful for the generally favourable tone of your criticism if I venture to correct two inaccuracies that you have introduced into your remarks.

(1) In the slightly irrelevant reference to Chauveau and Arloing's excellent treatise on the anatomy of the domesticated animals, you say that the English translation of the work is regarded as a dissection manual in the English-speaking veterinary schools. Now, admirable as that work is as a systematic text-book, it is pre-eminently unsuitable as a dissection guide, and as a matter of fact, it has never been used in the dissecting-room by more than a quite insignificant proportion of veterinary students in this country.

(2) Referring to my work, you say—"There are many woodcuts, the greater number of which are borrowed from Chauveau and Leyh." Now, of the minor illustrations to which you refer, there are forty-eight, and of these the total number from Chauveau and Leyh combined is nine.

Royal (Dick's) Veterinary College. JOHN MCFADYEAN.

[Allusion to a work which has been of much service to our correspondent in the task he has so ably carried out, as well as to very many others in their studies, can scarcely be considered irrelevant. English-speaking veterinary schools are not confined to Edinburgh, nor yet to this country, and we have reason to believe that more than 2,000 copies of Chauveau's Anatomy, in English, have been sold here and in America. Evidently, an insignificant proportion of earnest students of anatomy is not a characteristic of all veterinary schools. In French-speaking countries where anatomy is properly and thoroughly studied, and where veterinary surgeons are most expert and accomplished operators, that work is the only guide for the dissecting-room. It is now in its third edition. With regard to the illustrations, woodcuts, or whatever else they may be designated, it may be remarked that thirteen are copies of drawings in Chauveau's Anatomy, and nine in Leyh's.

But we would consider all this too trivial to waste time upon by busy men. There was no intention to disparage Professor McFadyean's work, but entirely the contrary; and our statements with regard to it are, we believe, accurate, so far as our judgment and information lead us.—ED. V. J.]

A BEQUEST.

SIR,—The library of the Edinburgh Veterinary Medical Society has recently received a valuable addition by the gift through T. Greaves, Esq., F.R.C.V.S., Manchester, of the large collection of volumes which formed the library of the late Mr. John Greaves, M.R.C.V.S., Flixton.

Amongst these volumes are many old and valuable works, as well as most of the productions of the standard authors of the profession and the professional journals from 1827 to the present time. The members of the society desire publicly to express their thanks to the representatives of the late Mr. Greaves for their valuable presentation, and by inserting this notice in your esteemed journal you will be conferring a sincere favour on the society.

I am, sir, yours very truly,

Edinburgh, *April 10th.* JOHN A. ROBINSON, *Hon. Sec.*

THE FELLOWSHIP DEGREE AND ITS PRIVILEGES.

SIR,—I see in the Supplementary Charter of the Royal College of Veterinary Surgeons, passed in 1876, that clause 9 only admits of Fellows of the College being Members of Council. This clause is, I think, unjust and unfair, and ought not to be. It is what I call "making flesh of one and fowl of another." I think there are quite as good men, and as fit to be Members of Council, who are not Fellows, as those who are, and perhaps a little more so. I hope and trust that every veterinary surgeon in the United Kingdom will use his utmost endeavours to get the clause done away with. If a veterinary surgeon thinks well to go up for the examination to obtain a Fellowship, let him have the same examination as those who obtained their Fellowship at first, and not, as time goes on, make the examination harder and more difficult. If I have been informed rightly—and I think I have—those who obtained the Fellowship at first merely passed a very simple examination, or none at all—in fact, had it given to them. There are 100 Fellows; 1,900 who are not Fellows. Members of Council to be chosen out of the 100; the other 1,900 to be left in the cold—a nice state of things, I must admit, for a profession! Looks well in print. HENRY BLUNT.

Lutterworth, *April 11th.*

"PUBLIC AND CANINE GRIEVANCE."

SIR,—Would you kindly allow me space for a few remarks on the above article, which appeared in last week's issue of the *Live Stock Journal*, from the pen of J. W. Hill, F.R.C.V.S.? To a member of the profession it would seem inconceivable that a man in Mr. Hill's position—even as a Fellow and as an author—would expose brother professionals to the ridicule of the general public through the means he has adopted, and at the same time attempt to gain reputation by the down-treading of his fellow-practitioners. "It is a vile bird that fouls its own nest;" and at the present time veterinary surgeons have quite enough adversities to contend with for the defence of their professional capabilities, without the backbiting of some of their more unworthy members. Mr. Hill commences his letter thus: "I am glad to observe, concerning the above subject, the ball continues to roll, and trust its revolutions will, sooner or later, result in the end desired—viz., that canine pathology will occupy its proper position in the curriculum of the various veterinary schools: the Royal, at Camden Town, setting the example." He continues thus: "Not a few cases, since I last wrote, have been brought under my notice illustrative of the woeful ignorance of even the M.R.C.V.S. on canine maladies."

In regard to the first statement, I know not what time is devoted to the tuition of canine pathology in the London College; but Mr. Hill must not take that school as a criterion, as at the Royal (Dick's) College, Edinburgh, the ailments of the canine race are as minutely gone into as is necessary, and no

student who has studied under Professor Walley, if he has employed his time as he should have done, has, at the present moment, any cause to regret the extra time spent on that subject while studying comparative pathology. Probably Professor Hill aims at the chair of canine pathology in the London College; if so, he has gone about it in a wrong course. If he be desirous of a reformation in the curriculum of the various veterinary schools, let him bring his ideas straightforward at the proper time and place, and not stand behind the scenes and merely agitate outsiders by contributions to agricultural papers, at the expense of his professional brethren and his own etiquette. R.O.F.S.

THE PRACTICAL EDUCATION OF VETERINARY STUDENTS.

SIR,—Being, like Mr. Clancy, a comparatively recent graduate of the R.C.V.S., permit me a few words in reply to that gentleman's letter. I must altogether deny Mr. Clancy's right to assume that, because he is a recent graduate, he is therefore in a position to give an opinion on the practical education of veterinary students. My own experience teaches me that so far from recent graduates, who have seen the various phases of the veterinary profession under the watchful eye of some eminent practitioner, being capable of forming an opinion about the practical teaching of the student at college, these individuals, while students, are often the very men who, in a great measure, render that teaching inoperative. Content with the phases of the veterinary profession which they have seen, they are not to be had as dispensers or dressers; and their supercilious looks or open ridicule often enough prevent those who "must put their trust in the training to be received at college" from taking full advantage of that training, meagre as Mr. Clancy thinks it. Mr. Clancy's genius is not altogether destructive; he points out how he would amend the practical teaching in two ways—namely, by having lectures delivered on the horse's age as shown by his teeth, and by the daily writing of certificates of soundness by students. Truly this mountain, being in labour, has brought forth a ridiculous mouse. I have notes of lectures on the age of all the domesticated animals as shown by the teeth, and these lectures were delivered at the college where Mr. Clancy was trained, and during the time that he was there. But "after all," a visit to Scott and Croll's yard, and a "tip" to the groom, if not quite so academic, is a much more practical way of learning the age of the horse as shown by the teeth.

Whether it is practicable to have examinations as to soundness and certificates written by all the seniors, and to have those certificates corrected every day is, at least, questionable. Still, if Mr. Clancy made only one examination and wrote only one certificate, most of his fellow-students were certainly not confined to that number. "An automaton to diagnose and treat diseases" must be a peculiar entity; certainly it is quite as likely to be evolved beneath the watchful eye of some eminent practitioner, by the too slavish copying of his methods, as from the practical training afforded at college. To me it seems quite possible for a man, under the present system, to become a good enough practitioner, if he will but take advantage of the opportunities of seeing practice from the time he enters college; be always willing to lend a hand (dress a mangy dog, to wit), and not be afraid to ask questions; then, during the vacations, go to help some practitioner, eminent or other. Such a one may not, as Mr. Clancy says, go on his way rejoicing, but with a considerable amount of diffidence, and not too great an opinion of his own acumen, will painfully and anxiously watch his patients, more especially if he starts in practice at once. And this is the period when a man becomes thoroughly practical; if he has anything in him, the young practitioner will

learn more in the first two years of practice than a seven years' apprenticeship would afford. Those who would alter the present system of teaching in the colleges should remember that, except to the very smart student, a man has his time pretty fully occupied in getting up the theoretical during the final terms; and it is certainly the impression among the students that a good theoretical man has a far better chance of getting through the final than a good practical student who is not so well up in theory. My own recollections of plucked candidates goes some way to confirm that opinion.

It may be a very wise thing for members of the profession who have a high estimate of their own capabilities to write letters, filling up your valuable pages, and devoted to showing the incompetence of the present veterinary surgeons; but the wisdom of it is not patent. I hope the public are edified and inspired with confidence in their "Vets." I trust, also, that the Examiners feel flattered by the plentiful lack of sagacity with which they are credited; as for the teachers they are being lectured to so let them suck as much wisdom out of the lectures as they afford. I am afraid the teaching on this subject, too, is, so far, anything but practical. "NEFAS."

AN IMPROVED TREPHINE.

SIR,—Messrs. Arnold and Sons, of West Smithfield, E.C., have requested me to send you a short description of an improved trephine they have made according to my directions, with the advantages it possesses over the old pattern, for insertion in the forthcoming number of your Journal.

I have had substituted for the usual trochar point, a curved steel centre-piece, slightly roughened at the curved portion. This may be made more or less prominent, as required, by means of a screw, which, when loosened, allows it to move freely.

The advantages gained by using this modified instrument are: That after the bone has been perforated by means of a gimlet supplied with the trephine, the centre-piece is inserted in it, and a fixed point is thus

obtained to work upon. There is no chance of the piece of bone separated by the circular saw falling into the sinus, as it is retained by the curve; and the time required for operating is much shortened. There is also, to my mind, an appreciable gain in having the handle secured to the trephine by a set-screw, with milled head, working from one end of it, as seen in the woodcut. This arrangement makes the instrument much pleasanter to hold.

Brighton, *March 16th.* JOHN MANNINGTON.

RUPTURE OF THE RECTUM.

SIR,—I see a report in the JOURNAL for March, of a case of rupture of the rectum. I had a similar case on the 18th September of last year. I was called to an aged mare that had been in pain more or less for the whole day. It was in the evening I saw her. I found the mare standing; the pulse was only just perceptible at the jaw, and rapidly running down; and the animal kept frequently straining. Before administering any medicine, I decided to make an examination *per rectum*. Directly inside was a mass of fæces, and on getting that out, I found, at the distance of about eighteen inches in, a large rupture of the rectum. It was sufficiently extensive for me to put my hand through and to feel the uterus and the small intestines—in fact, I got hold of the small intestines with my hand, and I could, if I had wished, have drawn them outside the anus. After making that discovery, I decided to do nothing, and the mare was dead by the following morning. Upon making inquiries, I found that the mare had for some time had a difficulty in expelling her fæces, and the owner had often taken it away with his hand. I infer from this, that the rectum, at the part where the rupture took place, had been getting thin and losing its power for some time, and ultimately gave way. I may say that I did not make a *post-mortem* examination, as I thought my *ante-mortem* examination was sufficient. I think this case is interesting to the profession, as in Mr. Spreull's case the rupture was "almost within reach of the hand," whereas mine was quite so. R. W. KNOWLES, JUN.

South Brink, Wisbech.

VETERINARY JURISPRUDENCE.

SIR,—Without sympathising in your correspondent's brusque censure, appearing in the JOURNAL for March, I cannot but think that the clause of the Act referred to, viz., 17, certainly does imply that any one *not* on the *Register of Veterinary Surgeons* (although he be on the *Register of Existing Practitioners*) is not entitled to call himself a Veterinary Surgeon. It is clear that there are *separate* registers, and the omission of mention of the Register of *Existing Practitioners* following that of "Veterinary Surgeons," in clause 17, prohibits *Existing Practitioners* from calling themselves V.S., and subjects them to the fine if they do so. If this be not so, I must apologise for obtuseness; but at the same time feel, with many others, that the great advantage of *public* distinction—one of the purposes for which the Act was obtained—would be lost were *Existing Practitioners* able to style themselves *Veterinary Surgeons*. HENRY DYER.

Leatherhead.

[If clause 17 were to be enforced against Existing Practitioners in the way indicated, they could not exist under any designation, and their registration was needless. But the clause was intended to protect them, as well as the public and the profession, by prohibiting unregistered persons from designating themselves Veterinary Surgeons, etc. The Act, in clause 16, safeguards the titles of members of the profession from Existing Practitioners and others. —ED. V. J.]

SPAYING: IS IT JUSTIFIABLE OR CRUEL?

SIR,—The practice of spaying pigs, as well as bitches, has fallen into desuetude over a great part of England; but in the district in which I reside there are some very ardent believers in it, who give as their principal reasons for its continuance:—

(1) Pigs so operated upon fatten quicker, because they do not waste time in "hogging."

(2) That they are less troublesome.

(3) That pork will not take salt if the sow happened to be at œstrum when slaughtered.

The practice as usually performed cannot fail to inflict a very large amount of pain, since anæsthetics are out of the question in respect to the pig; though I, for one, have operated on a great many bitches under chloroform, and am of opinion that there are cases in which such an operation is excusable, as in those bitches who are ever at œstrum and never fit for conception, and commonly called "whores" among the gentlemen of the fancy.

My object in bringing the subject to your notice is to ascertain if in the opinion of the profession spaying is necessary, and if so, justifiable; or being unnecessary, therefore cruel, and to be discountenanced?

East Grinstead, Sussex. HAROLD LEENEY, M.R.C.V.S.

TO CORRESPONDENTS.

A NUMBER of communications and reports of societies are unavoidably held over until next month. We would again request secretaries of societies to condense their reports as much as possible, in order to ensure early publication, as the pressure on our space is increasingly heavy.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from H. Dyer, Leatherhead; J. B. Wolstenholme, Manchester; E. Kitchin, Liverpool; G. Gartside Mayor, Kirkham; C. Gresty, Newcastle-on-Tyne; H. Kidd, Hungerford; J. McQueen, Glasgow; "Nefas"; Messrs. Gresswell, Louth; J. B. W. Skoulding, A.V.D., Woolwich; H. Leeney, East Grinstead; E. A. Hollingham, Redhill; H. Blunt, Lutterworth; J. McFadyean, Edinburgh; D. C. Pallin, Dublin; W. A. Edgar, Dartford; "R.O.F.S."; J. H. Robinson, Edinburgh; Professor Walley, Edinburgh; R. H. Dyer, Limerick; Professor Smith, Ontario; W. Penhale, Devon.

BOOKS AND PAMPHLETS: *J. Woodroffe Hill*, The Diseases of Poultry; *G. S Heately*, Practical Veterinary Remedies; *T. Christy*, New Commercial Plants and Drugs; First Annual Report of the Bureau of Animal Industry; *W. Gilchrist*, Memoir on the Treatment of the Diseases of the Camel; *J. Mills*, Indian Stock-Owner's Manual.

JOURNALS, ETC.: *Annals of Surgery; Lahore Veterinary Journal; Revista Argentina de Ciencias Medicas; Deutsche Zeitschrift für Thiermedicin und Vergleichende Pathologie; Repertorium der Thierheilkunde; Clinica Veterinaria; Quarterly Journal of Veterinary Science in India; Recueil de Médecine Vétérinaire; Der Thierarzt; Wochenschrift für Thierheilkunde und Viehzucht; Annalés de Médecine Vétérinaire; Lancet; British Medical Journal; National Live Stock Journal; Medical Press and Circular; Journal de Médecine Vétérinaire; Archives Vétérinaire; Revue Vétérinaire; Live Stock Journal; Edinburgh Medical Journal; Journal of Comparative Medicine and Surgery; L'Echo Vétérinaire; La Presse Vétérinaire; Animal World; Der Hufschmied; Mark Lane Express; Œsterreichische Vierteljahresschrift für Wissenschaftliche Veterinärkunde; Animalia; Stock-keeper.*

NEWSPAPERS: *Kent Messenger; Carlow Sentinel; Minneapolis Tribune; York Herald; Leeds Mercury.*